

# Medical First Responder Course



## *Instructor's Guide* **COMPLETE**

Name:



OFFICE OF U.S. FOREIGN  
DISASTER ASSISTANCE



MIAMI - DADE FIRE  
RESCUE DEPARTMENT

Rev. Feb 2002



## ACKNOWLEDGEMENTS

-The Disaster Preparedness and Response Program was developed through a grant agreement between the Miami Dade Fire Rescue Department and the Office of U.S. Foreign Disaster Assistance (OFDA) of the U.S. Agency for International Development (AID) of the Federal Government of the United States of America. The program was undertaken in response to a request for assistance by disaster preparedness and response agencies and institutions in the Latin American Region. The request for assistance led to the development of courses to better prepare these agencies and institutions to more efficiently mitigate disasters.

The Disaster Preparedness and Response Program has been expanded to include other regions of the world with the same objectives as for Latin America—to assist response agencies and institutions become better prepared to effectively and efficiently respond to and mitigate disasters.

The Medical First Responder Course was designed, developed and delivered on the basis of a detailed analysis and training needs assessment of the Latin America region as delineated by the members of the Advisory Committee (*ad hoc*) assembled by USAID/OFDA in San Jose, Costa Rica in November 1992. The course has been adopted for use in other regions of the world.

We would like to acknowledge those individuals whose hard work and efforts have made this course possible:

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## **In Gratitude**

Sincere appreciation and gratitude is extended to Jerry Williams for direction and oversight and to Kamran Grasselli for his assistance in editing and developing the materials, as well as all the members of the Miami-Dade Fire Rescue Department; the Office of U.S. Foreign Disaster Assistance in San Jose, Costa Rica; and members of the agencies and institutions in the Latin American/Caribbean region who made the original Medical First Responder Course possible.



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Portions of these materials may used with proper acknowledgement using the following statement: "Source: Medical First Responder Course, USAID/OFDA-LAC."

–Miami, Florida, U.S.A.

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## Medical First Responder Course

# Lesson Plan 1

## Course Introduction

**Approximate Duration: 2 hours**

**Tasks:**

1. Issue name tags to participants and staff.
2. Verify that all participants, instructors, assistants, personnel and coordinator are present.
3. If there was no formal inauguration, request a representative of the host organisation to say a few words and inaugurate the Course.
4. If applicable to the audience, give a brief overview and relevance of the OFDA Medical First Responder course.
5. Issue Participant Workbooks.
6. Collect Course Registration Form, Liability Release Form, and Health/Dietary Requirements Form.

**Materials:**

- Name tags and name tents
- Participant Workbook and handouts
- Participant Course Evaluation Form (handout)

### OBJECTIVES

Upon completion of this lesson, you will become familiar with:

- 1) Other participants and the respective organisations they represent, the course coordinator, the instructors and the support staff.
- 2) The following aspects of the course: Purpose, objectives, evaluation and methodology, materials to be used, course schedule, facilities and ground rules.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 1-1 TR 1-2</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce instructors and assistants.</li> <li>2) Present the lesson.</li> <li>3) Present lesson objectives. Ask participants to read from their workbooks.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Personal Introductions</b></p> <p><b><i>&lt;Thank the participants for their presence and the host organisation for their help.</i></b></p> <p><b><i>Invite the instructors, assistants, support personnel and the coordinator, to introduce themselves by stating their name, rank, profession or occupation, institution to which they belong and any other information that they consider of interest.&gt;</i></b></p> <p><b>Introduction of participants:</b></p> <p><b>Option A:</b> Each participant introduces him/herself. Allow each person one and a half minutes to state his/her name, rank, profession, work, position and motivation for participating in this course.</p> <p><b>Option B:</b> Mutual introductions. Instruct participants to form pairs with the person seated next to them and exchange information with one another; they then introduce each other to the rest of the class. Ask them to provide the same information as in Option A.</p> <p><b>NOTE</b> <b><i>&lt;ALLOW 5 MINUTES.&gt;</i></b></p> <p><b>Option C:</b> Random reciprocal introductions. Requires a container for the name tags. Half the group places their name tags in the container. Those who kept their tags pick one from the container and place it next to their own. The participants pair up according to the names. They then introduce each other as in Option B.</p> <p><b>NOTE</b> <b><i>&lt;ALLOW 10 MINUTES.&gt;</i></b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<p><b>Option D:</b> Puzzle. TIME REQUIRED: 50 MINUTES.</p> <p><b>&lt; Note: It is recommended to set up the day before.&gt;</b></p> <ol style="list-style-type: none"> <li>1) In the centre of a letter-size sheet of paper write in large, bold letters a word pertinent to the Course, such as fracture, cardiopulmonary resuscitation, haemorrhage, patient, pain or other.</li> <li>2) In each of the four corners of the paper write the name of a participant. Cut the paper into four pieces. On each piece will remain a part of the word selected and the name of a participant.</li> <li>3) Put all the pieces in a container. Each participant must take a piece and search among the other participants until the four pieces are found and the word put back together.</li> <li>4) The four participants introduce each other as in Option B.</li> </ol> <p><b>&lt;Allow 10 minutes each group.&gt;</b></p> <p><b>2. Course Materials</b></p> <p><b>2.1 Participant Workbook (WB)</b></p> <p><b>&lt;Request participants to open workbooks.</b></p> <p><b>&lt;Inform the participants that the workbook is their property and will be useful only if it is completed. Ask the participants to write their names on their workbooks.</b></p> <p><b>&lt;Review workbook lesson by lesson, checking page numbers and verifying that everyone's workbook is complete.&gt;</b></p> <p><b>2.2 Reference Material (RM)</b></p> <p>Reference material includes additional in-depth material as recommended reading. Also includes a Glossary.</p> <p><b>&lt;COLLECT THE PRE-WORK. The other instructors should correct the pre-work and return it to the participants at the end of the lesson.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>&lt;DISTRIBUTE THE PRELIMINARY SURVEY AND GIVE THE PARTICIPANTS 10 MINUTES TO ANSWER IT.&gt; &lt;These forms must be copied for this lesson&gt; (These surveys must be reviewed by all instructors and discussed during the instructors' meeting to determine the level of the participants.)</b></p>	
TR 1-3	<p><b>3. Course Purpose and Objective</b></p> <p><b>3.1 Purpose</b></p> <p>To provide the participant the knowledge and skills needed to render aid on-site to sick or injured persons, stabilise their condition and prepare them for transport to a medical facility.</p>	
NOTE	<p><b>3.2 Performance Objectives</b></p> <p><b>&lt;Ask participants to assist in reading aloud.&gt;</b></p> <p>In the final practical evaluation, you will be given three scenarios—a trauma case, a medical emergency, and a childbirth—you will respond to them one at a time using the procedures you will learn in this course. You will be able to:</p> <ol style="list-style-type: none"> <li>1) Receive and register the request for assistance.</li> <li>2) Respond to the scene, evaluate it and report the situation.</li> <li>3) Request the resources needed and secure the scene.</li> <li>4) Gain access to the victim and evaluate his/her condition.</li> <li>5) Select all the necessary equipment.</li> <li>6) Stabilise the patient at the scene.</li> <li>7) Package and prepare the patient for transport.</li> <li>8) Report the condition of the patient and the treatment given.</li> <li>9) Prepare the equipment for the next emergency.</li> </ol>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<p>You will be provided all the basic equipment of a Medical First Responder, the forms and the personal protective equipment. You will have 15 minutes to complete all the steps established in the protocol for each incident.</p> <p><b>3.3 Training Objectives</b></p> <p><b>&lt;Ask participants to assist in reading aloud.&gt;</b></p> <p>Upon completion of the course, you will be able to:</p> <ol style="list-style-type: none"> <li>1) List the steps for preparing the medical first responder's equipment.</li> <li>2) Describe the method for receiving and documenting a request for assistance, reporting on the situation and requesting resources.</li> <li>3) List the steps for securing the scene and gaining access to the victim.</li> <li>4) Describe patient assessment and select the correct equipment to provide care.</li> <li>5) Describe the procedures for stabilizing, preparing and transporting a patient.</li> <li>6) Complete a report on a patient's condition and the treatment given.</li> </ol> <p><b>NOTE</b></p> <p><b>&lt;Remind participants that each lesson will introduce its own specific training objectives.&gt;</b></p> <p><b>&lt;QUESTIONS or COMMENTS?&gt;</b></p> <p><b>4. Course Methodology</b></p> <p>The course methodology is highly participatory and allows constant interaction between the instructor and participants. Participants will be required to gain some background knowledge as well as acquire manual skills. Instructional and performance objectives are clearly stated at the beginning of each lesson.</p> <p><b>NOTE</b></p> <p><b>&lt;Inform participants that they will have ongoing opportunities to provide feedback and ask questions.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 1-1 NOTE</b></p>	<p><b>5. Participant Testing and Course Schedule</b></p> <p><b>&lt;See Course Evaluation System table, page LP 1-7 and participants WB 1-5.&gt;</b></p> <p>There is a total of <b>23 lessons</b> which includes a general review (Lesson 22), and a Final Practical Evaluation (Lesson 23). Each lesson is followed by an open-book Post-Test (self-test), to reinforce the material covered. Post-tests will <b>not</b> be collected by the instructors.</p> <ul style="list-style-type: none"> <li>• Lessons are grouped into six units. There are written <b>Unit Tests</b> at the end of Lessons 5, 7, 11, 14, 17 and 21, with a value of 100 points each.</li> <li>• There are <b>Practical Exercises</b> at the end of Lessons 6, 7, 8, 10, 11, 12, 18, 19, and 21. Your performance on all exercises must be satisfactory within four attempts. The instructor's evaluation form (Skill Checklist) can be found at the end of each lesson in your workbook.</li> <li>• There are two <b>Group Presentations</b>: One after Lesson 13 and another after Lesson 21. These involve a medical/trauma scenario and you will be evaluated on skills learned up to that point. You will be evaluated as a group. Your group must score a minimum of 80 points.</li> <li>• There is a <b>Group Exercise</b> after Lesson 19. Each group will be given the same surprise scenario. You will be required to use all your MFR skills and complete the scenario as learned in the course. This is <b>not</b> a scored exercise.</li> <li>• The <b>Final Practical Evaluation</b> at the end of the course will include three stations with simulated situations typical of the region. <ul style="list-style-type: none"> <li><b>Station 1: Trauma Case, 100 points (80 pts. to pass)</b></li> <li><b>Station 2: Medical Emergency, 50 points (40 pts. to pass)</b></li> <li><b>Station 3: Childbirth, 50 points (40 pts. to pass)</b></li> </ul> <p>In the Final Practical Evaluation, you must complete all steps identified for each of the three stations in the respective evaluation form and established protocol.</p> </li> </ul> <p><b>NOTE</b> <b>&lt;Review MFR Course Evaluation System, next page.&gt;</b></p>	



<b>MFR Course Evaluation Schedule</b>			
<b>Lesson</b>	<b>Lesson Post-Test</b> Not Scored	<b>Practical Exercises</b> Successful Performance Required	<b>Written Unit Tests</b> Passing Score Required
1	Course Introduction		
2	EMS and the MFR		▼
3	Infectious Disease and Precautions		▼
4	The Incident		▼
5	Anatomical References		<b>Unit Test 1</b>
6	Patient Assessment	Patient Assessment and Taking Vital Signs	▼
7	BLS and CPR	CPR and FBAO	<b>Unit Test 2</b>
8	Oxygen Therapy	Administering oxygen, mask, BVM, and airways	▼
9	Haemorrhage and Shock		▼
10	Soft-Tissue Injuries	Controlling haemorrhage, tourniquet, treating and bandaging	▼
11	Musculoskeletal Injuries	Immobilisation and splinting	<b>Unit Test 3</b>
12	Skull, Spinal and Chest Injuries	Treating injuries, using cervical collar	▼
13	Burns and Environmental Emergencies		▼
	<b>First Group Presentation (Passing score required)</b>		▼
14	Poisoning		<b>Unit Test 4</b>
15	Cardiovascular Emergencies and Abdominal Distress		▼
16	Respiratory Emergencies		▼
17	Seizures, Diabetic Emergencies and CVA		<b>Unit Test 5</b>
18	Childbirth	Infant delivery and complications, mother and infant assessments	▼
19	Lifting and Moving Patients	Securing and moving patients on spineboards	▼
	<b>Group Exercise</b>		▼
20	Report Writing and Preparation for the Next Call		▼
21	MCI/Triage	Triaging patients using S.T.A.R.T.	<b>Unit Test 6</b>
	<b>Second Group Presentation (Passing score required)</b>		
22	Course Review		
23	<b>Final Practical Evaluation – Three Stations</b> Passing Score Required <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center;">Trauma</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center;">Medical</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center;">Childbirth</div> </div>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<p><b>Daily Lesson Evaluations:</b> At the end of each lesson, you will be asked to rate the instructor and lesson content, and provide comments. At the end of the day you will be asked to identify what has worked well and what needs improvement.</p> <p><b>&lt;Encourage feedback on any subject, such as food, facilities, materials, content, etc.&gt;</b></p> <p><b>Overall Course Evaluation:</b> You will be asked to critique the MFR Course as a whole, and identify its strengths and weaknesses.</p> <p><b>&lt;Advise participants that this information will be used to improve future courses.&gt;</b></p> <p><b>Conditions for passing the course</b></p> <ul style="list-style-type: none"> <li>• <b>Punctual attendance at all activities is mandatory. This includes all lessons, practises, and evaluations.</b></li> </ul> <p><b>&lt;Define absence policy.&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Minimum score on Unit Tests is 70 points.</b> Your overall average must be a minimum of <b>70 points</b> in order to participate in the Final Practical Evaluation.</li> <li>• <b>Make-up tests:</b> If you do not receive a passing score on one of the Unit Tests you will receive <b>one make-up opportunity per test</b>. The make-up Unit Tests will be in the same format and in the presence of at least two instructors. <b>The highest score possible on a make-up Unit Test is 70 points, regardless of your actual score.</b> If you are unable to pass any one of the make-up tests, you will not be able to take any remaining tests. In this case, you may continue the course at your own discretion. You will receive only a letter of attendance after completing all remaining course activities, including exercises.</li> <li>• <b>Practical Exercises:</b> Your performance on all practical exercises must be satisfactory.</li> <li>• <b>Group Presentation:</b> Your group must achieve a passing score.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<ul style="list-style-type: none"> <li>• <b>Final Practical Evaluation:</b> Only <b>one make-up opportunity</b> will be given for each Final Practical Evaluation station. You must pass each make-up station before proceeding to the next station. You must pass all three stations to successfully complete the course. If you are unable to pass any one make-up Practical Evaluation, you will receive only a letter of attendance as previously described.</li> <li>• After successfully completing all Unit Tests and the Final Practical Evaluation you will receive a Certificate of Completion.</li> </ul> <p><b>6. Registration Forms</b></p> <p>Participants are required to turn in the following forms: These forms are in the participants workbook.</p> <ul style="list-style-type: none"> <li>• Course Registration Form</li> <li>• Health and Dietary Requirements Form</li> <li>• Liability Release Form</li> </ul> <p><b>NOTE</b> <i>&lt;Collect the forms and photos. Review to ensure completeness.&gt;</i></p> <p><b>7. Facilities and Ground Rules</b></p> <p><b>NOTE</b> <i>&lt;This section will need to be prepared together with the local course coordinator.&gt;</i></p> <p><b>Classroom etiquette:</b></p> <ul style="list-style-type: none"> <li>• Smoking is prohibited inside any building; participants will be able to smoke outside during the breaks.</li> <li>• No eating or drinking in the classroom (this may be modified by the course coordinator to allow drinking tea or coffee, etc.).</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<ul style="list-style-type: none"> <li>• Interruptions will only be permitted for emergencies. The administrative staff will post messages for the participants, which you can retrieve during breaks. Mobile (cellular) phones and beepers must be off or set to silent/vibrate mode.</li> </ul> <p><b>Meal Schedule:</b> System to use (cards, pay-as-you-go or other)</p> <p><b>Housing:</b> Review expenses that the organisation covers. Inform the participants that before leaving the housing, they will have to pay any extra expenses incurred (telephone calls, laundry, drinks or other).</p> <p><b>Travel:</b> Reservations, confirmations, itineraries, changes, should be directed to administrative staff.</p> <p><b>&lt;Pre-plan safety with local coordinator and officials.&gt;</b></p> <p><b>Safety:</b></p> <ul style="list-style-type: none"> <li>• Emergency procedures, classroom evacuation, emergency exits (in case of fire, earthquake, tornado or other potential risk in the locality where the course is given).</li> <li>• Location of safety areas in the facilities, meeting points, etc.</li> <li>• Location of the first aid kit, its contents, and procedures in case of any accident or illness.</li> <li>• The possible need to transport personnel to a centre for definitive care should be anticipated by the course coordinator and contingency plans should be made.</li> </ul> <p><b>Reference Material:</b> Describe materials and explain availability to participants who wish to gain more information on any subject in the course. Material available will vary.</p> <p><b>Optional:</b> Tourist or social activities: inform dates and schedules, registration or payment needed, transportation, etc.</p> <p><b>NOTE</b></p> <p><b>&lt;Review with participants what activities they are interested in doing on their days off.&gt;</b></p> <p><b>&lt;Divide the participants into 4 groups and ask them to list their expectations of the course (use flipchart paper). Have each group select a spokesperson to present their expectations to the rest of the class. Write down the expectations of each group and keep them. Present the expectations again at the end of the course to find out if they have been met.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>8. File</b></p> <p><b>&lt;Post a flipchart labelled “File” and explain that its purpose is to record questions and issues that will be clarified in subsequent lessons or in the general review.&gt;</b></p> <hr/> <p><b>III. CLOSING</b></p> <ul style="list-style-type: none"><li>• In this course there are no surprises; each activity is based on objectives that are presented to you.</li><li>• All the instructors are available to help you.</li><li>• Answer questions, explanations or comments.</li></ul> <p><b>&lt;Thank the participants for their participation and introduce the next lesson.&gt;</b></p> <hr/> <p><b>Exercises and Practicals</b></p> <p>Keep in mind that this course may be the first time participants are meeting each other. Promote a pleasant and cordial atmosphere. Manage time carefully.</p> <p><b>Selecting Work Groups:</b></p> <p>Select groups in order to increase the variety in professional and educational backgrounds as much as possible.</p> <p>It is also important to establish a balance within each group with regard to:</p> <ul style="list-style-type: none"><li>• Gender</li><li>• Having members with leadership or experience in fields relevant to the course</li><li>• Persons with passive or outgoing dispositions</li></ul> <p>Ideally, the groups set up in this manner (five or six) should remain fixed for all exercises throughout the course, except in cases where a balance needs to be re-established due to a particular circumstance or a withdrawal from the course.</p> <p>Stress the value of cooperation, integration and maintaining a group vision to reinforce team spirit.</p>	

## MFR Course Evaluation Schedule

Lesson	Lesson Post-Test Not Scored	Practical Exercises Successful Performance Required	Written Unit Tests Passing Score Required
1	Course Introduction		
2	EMS and the MFR		▼
3	Infectious Disease and Precautions		▼
4	The Incident		▼
5	Anatomical References		<b>Unit Test 1</b>
6	Patient Assessment	Patient Assessment and Taking Vital Signs	▼
7	BLS and CPR	CPR and FBAO	<b>Unit Test 2</b>
8	Oxygen Therapy	Administering oxygen, mask, BVM, and airways	▼
9	Haemorrhage and Shock		▼
10	Soft-Tissue Injuries	Controlling haemorrhage, tourniquet, treating and bandaging	▼
11	Musculoskeletal Injuries	Immobilisation and splinting	<b>Unit Test 3</b>
12	Skull, Spinal and Chest Injuries	Treating injuries, using cervical collar	▼
13	Burns and Environmental Emergencies		▼
	<b>First Group Presentation (Passing score required)</b>		▼
14	Poisoning		<b>Unit Test 4</b>
15	Cardiovascular Emergencies and Abdominal Distress		▼
16	Respiratory Emergencies		▼
17	Seizures, Diabetic Emergencies and CVA		<b>Unit Test 5</b>
18	Childbirth	Infant delivery and complications, mother and infant assessments	▼
19	Lifting and Moving Patients	Securing and moving patients on spineboards	▼
	<b>Group Exercise</b>		▼
20	Report Writing and Preparation for the Next Call		▼
21	MCI/Triage	Triaging patients using S.T.A.R.T.	<b>Unit Test 6</b>
	<b>Second Group Presentation (Passing score required)</b>		
22	Course Review		
23	<p style="text-align: center;"><b>Final Practical Evaluation – Three Stations</b></p> <p style="text-align: center;">Passing Score Required</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center; width: 30%;"> <b>Trauma</b> </div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center; width: 30%;"> <b>Medical</b> </div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center; width: 30%;"> <b>Childbirth</b> </div> </div>		



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Medical First Responder Course

## Lesson 1 Objectives

1. Become familiar with other participants and the organisations they represent, the course coordinator, the instructors and the support staff.

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Medical First Responder Course

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## Lesson 1 Objectives

2. Become familiar the following aspects of the course: Purpose, objectives, evaluation and methodology, materials to be used, course schedule, facilities and ground rules.

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Medical First Responder Course

## Course Purpose

To provide the participant the knowledge and skills needed to render aid on-site to sick or injured persons, stabilise their condition and prepare them for transport to a medical facility.

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# MFR Lesson Evaluation for Participants

Do not write your name on this form. Please complete a copy of this form at the end of every lesson.

Your evaluations are very valuable toward improving the course. For ratings, please use a scale system from 1 to 7, as follows:

1 Very poor	2 Poor	3 Below Average	4 Average	5 Good	6 Very Good	7 Excellent
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**Course Location:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please fill in the required information.	<b>Lesson Number</b>	<b>Lesson Name</b>
	<b>Instructor's Name</b>	
Use a scale from 1 to 7 as described above to rate the various lesson components.	<b>Lesson Rating</b> (rate 1 to 7)	
	Content _____ Instructor _____ Method _____ Workbook _____ Interaction _____	
Mark your selection with an "X"	<b>Instruction Level</b> (mark with an "X")	
	Too basic _____ Appropriate _____ Too advanced _____	
	<b>Duration</b> (mark with an "X")	
	Too short _____ Appropriate _____ Too long _____	
Rate from 1 to 7	<b>Usefulness</b>	
	Was this lesson useful to you? Yes _____ No _____	
If you need additional space, please use the back of the sheet.	<b>Overall Lesson Rating</b>	
	Taking all the above into consideration, I rate this lesson: _____	
<b>Comments and Observations</b>		

*Thank you for your help. Your input is valuable. Please turn in this completed form to the instructor.*

# Participant Course Evaluation

## MEDICAL FIRST RESPONDER COURSE

Location: \_\_\_\_\_

Dates: \_\_\_\_\_



*Dear Participant: This course evaluation is a vital part of monitoring the MFR training programme. Your comments are valuable and will help us to refine and improve the course. Please answer this anonymous and confidential questionnaire as carefully as possible. Attach an extra sheet if necessary.*

**PART 1 – Lesson Evaluation:** Please fill in this form at the end of **every lesson**. Timing is important, so that you capture your ideas while fresh. Rate each of the 23 lessons, focusing on two aspects: lesson content and the instructor. Fill in each rating from 1 to 7, using the following scale:

1 Very poor	2 Poor	3 Below Average	4 Average	5 Good	6 Very Good	7 Excellent
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Daily Lesson Evaluation				
Lesson Number	Rating		Comments	
	Content	Instructor	Positive	Needs Improvement
1. Introduction				
2. EMS and the MFR				
3. Infectious Disease Precautions				
4. The Incident				
5. Anatomical References				

Daily Lesson Evaluation				
	Rating		Comments	
Lesson Number	Content	Instructor	Positive	Needs Improvement
6. Patient Assessment				
7. CPR				
8. Oxygen Therapy				
9. Haemorrhage and Shock				
10. Soft-Tissue Injuries				
11. Musculoskeletal Injuries				
12. Skull, Spine, and Chest Injuries				
13. Burns and Environmental Emergencies				
14. Poisoning				
15. Cardiovascular Emergencies, Brain Attack and Hypertension				

Daily Lesson Evaluation				
	Rating		Comments	
Lesson Number	Content	Instructor	Positive	Needs Improvement
16. Chronic Obstructive Pulmonary Disorder				
17. Seizures, Diabetic Emergencies and Acute Abdomen				
18. Childbirth Emergencies				
19. Patient Handling and Transportation				
20. Report Writing and Preparation for the Next Call				
21. Triage				
22. General Review				
23. Final Practical Evaluation				

Additional comments regarding the lessons: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PART 2 – Overall Course Evaluation:** Please fill in this form at the **end of the course**. Rate each course component. Fill in each rating using the same scale of 1 to 7.

<b>Overall Course Evaluation</b>			
<b>Course Component</b>	<b>Rating</b>	<b>Comments</b>	
		<b>Positive</b>	<b>Needs Improvement</b>
<b>Pre-Work</b>			
<b>Participant's Workbook</b>			
<b>Lesson Sequence</b>			
<b>Group activities</b>			
<b>Course method</b>			
<b>Visual aids</b>			
<b>Reaching lesson objectives</b>			
<b>Instructors as a team</b>			
<b>Applicability of Final Presentation</b>			
<b>Relevance of Course to your work</b>			
<b>Quality of classroom facilities</b>			

- What is your overall opinion of the difficulty level of the MFR Course?

\_\_\_\_ Too basic                      \_\_\_\_ Appropriate                      \_\_\_\_ Too advanced

Please tell us why: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- What is your opinion of the course duration?

\_\_\_\_ Too short                      \_\_\_\_ Appropriate                      \_\_\_\_ Too long

Please tell us why: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- Did the MFR Course meet your personal expectations?

\_\_\_\_ Yes                      \_\_\_\_ No

Please tell us why: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- From an **overall** point of view, how would you rate the MFR Course? (Circle one, please.)

1 Very poor	2 Poor	3 Below Average	4 Average	5 Good	6 Very Good	7 Excellent
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Additional comments or suggestions regarding the MFR Course you would like to add:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



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## Medical First Responder Course

# Lesson Plan 2

## The Emergency Medical Services (EMS) System and the Medical First Responder

**Suggested Duration:** 2 hours

**Preparation:** Obtain background information regarding applicable local laws and customs.

**Materials:**

- Slide projector and projection screen
- Flipchart
- Flipcharts
- Transparencies
- Extension cord
- Spare bulbs
- Pens
- Handouts
- Complete set of personal protective equipment (as listed in the lesson)

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) Describe the emergency medical services (EMS) system in the area you reside.
- 2) List six duties and/or responsibilities of the medical first responder (MFR).
- 3) Define negligence and give an example as it relates to EMS.
- 4) Define abandonment and give an example as it relates to EMS.
- 5) Define implied consent and expressed consent.





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 2-1 TR 2-2 TR 2-3</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce instructor and assistants.</li> <li>2) Introduce the lesson.</li> <li>3) Present lesson objectives – ask a participant to read them aloud.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Introduction to Pre-hospital Care</b></p> <p><i>&lt;Explain based on Brady, Chapter 1.&gt;</i></p> <p><b>2. The Emergency Medical Services (EMS) System</b></p> <p><i>&lt;Ask the participants for their own definition of an EMS system (fill in WB), write them on a flipchart, and compare them with the definition in the TR.&gt;</i></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> The Emergency Medical Services (EMS) System is a network of resources linked together for the purpose of providing emergency care and transport to victims of sudden illness or injury.</p> </div> <p><b>3. COMPONENTS OF AN EMERGENCY MEDICAL SERVICES (EMS) SYSTEM</b></p> <p><i>&lt;Use TR to explain the components of an EMS system. Instruct participants to copy diagram into their WB.&gt;</i></p> <p><i>&lt;Ask participants to draw an organisational chart of their local EMS system in the blank space in their workbooks. Review various drawings, pointing out differences and similarities. Stress importance of having a central coordinated system (universal emergency number). Focus should be on efficiency and time savings, which translate into more lives saved.&gt;</i></p>	
<p>NOTE</p>		
<p>TR 2-4</p>		
<p>TR 2-5</p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<h2>4. MEDICAL FIRST RESPONDER (MFR)</h2> <div> <p><b>TR 2-6</b></p> <p><b>Definition:</b> The first person on the scene of an incident with emergency medical care skills, typically trained to the most basic EMS level.</p> </div> <p>If the Medical First Responder is at the incident as a member of EMS, it is not necessary to alert EMS.</p> <p><b>NOTE</b> &lt;Differentiate with “first person on the scene.”&gt;</p> <h2>5. Qualities of the MFR</h2> <p><b>NOTE</b> &lt;Request the participants to provide two or three ideas of what they perceive the qualities of an MFR should be. Note them on the flipchart and compare with the FC.&gt;</p> <p>&lt;EMPHASIZE that a <b>COMMITMENT</b> to the qualities listed below is essential to excellent MFR work.&gt;</p> <p><b>Qualities of the MFR</b></p> <p>The MFR must possess, among others, these qualities:</p> <div> <p><b>FC 2-1</b></p> <ul style="list-style-type: none"> <li>• Responsibility</li> <li>• Sociability</li> <li>• Honesty</li> <li>• Pride (hygiene, uniform, personal appearance)</li> </ul> <p><b>FC 2-2</b></p> <ul style="list-style-type: none"> <li>• Emotional stability</li> <li>• Professional demeanour</li> <li>• Good physical condition</li> <li>• Demonstrated ability (many may want to be an MFR, but not all can be)</li> </ul> </div> <h2>6. DUTIES OF THE MFR</h2> <p>&lt;Write on flipchart five or six of the participants’ ideas of the duties of an MFR. Compare them with the prepared FC.&gt;</p> <div> <p><b>TR 2-7</b></p> <ol style="list-style-type: none"> <li>1) Protect your safety and the safety of your crew, the patient, and bystanders.</li> <li>2) Gain access to the patient.</li> </ol> <p><b>TR 2-8</b></p> <ol style="list-style-type: none"> <li>3) Assess the patient to identify life-threatening problems.</li> <li>4) Alert additional EMS resources.</li> <li>5) Provide care based on assessment findings.</li> </ol> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 2-9	<ol style="list-style-type: none"> <li>6) Assist other EMS personnel.</li> <li>7) Participate in record-keeping and data collection as received.</li> <li>8) Act as liaison with other public safety workers.</li> <li>9) Perform patient packaging/preparation for movement and transportation.</li> </ol>	
NOTE	<p><b>7. LEGAL ASPECTS</b></p> <p><i>&lt;Document the local laws regulating pre-hospital treatment with assistance from the participants. Legal aspects vary country by country.&gt;</i></p>	
NOTE	<p><b>7.1. Legislation and Local Protocols</b></p> <p><i>&lt;Explain and comment on the legal aspects of a medical first responder rendering care in the local country, e.g., who has the authority to officially declare a person dead?&gt;</i></p> <ol style="list-style-type: none"> <li>1) Local legislation</li> <li>2) Protocols</li> </ol>	
TR 2-10	<p><b>7.2. Responsibilities of the MFR</b></p> <p>Professional responsibility refers to the legal and ethical obligation that all persons who practice an art or profession must be accountable before the law for any acts that cause harm as a result of carrying out that activity.</p> <p><b>Scope of care:</b> Actions that are legally allowed by the MFR when providing patient care.</p>	
TR 2-11	<p><b>Duty to act:</b> The contractual or legal obligation of the MFR to provide care.</p>	
TR 2-12	<p><b>Breaches of Responsibility</b></p> <p><b>Abandonment:</b> Discontinuing emergency medical care without making sure that another health care professional with equal or better training has taken over.</p> <p><i>&lt;Give example of abandonment.&gt;</i></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 2-13	<p><b>Negligence:</b> Failure to provide the expected standard of care, causing injury or death of the patient.</p> <p>Usually, negligence is determined through a legal process. (See Brady, p. 35)</p>	
NOTE	<p><b>&lt;Give example of Negligence.&gt;</b></p> <p><b>7.3. RIGHTS OF THE PATIENT</b></p> <p><b>&lt;List some of the rights that the patient has when receiving care from an MFR.&gt;</b></p>	
TR 2-14	<p>Rights of the patient when receiving emergency care:</p> <ul style="list-style-type: none"> <li>• To solicit and receive pre-hospital care.</li> </ul>	
TR 2-15	<ul style="list-style-type: none"> <li>• Confidentiality regarding personal information and condition.</li> <li>• To pursue legal recourse for acts of negligence, abandonment, and/or violations of confidentiality.</li> </ul>	
TR 2-16	<ul style="list-style-type: none"> <li>• To denounce and demand restitution for improper care and/or any violation of privacy.</li> <li>• In some situations, the patient has the right to refuse care. The patient may be required to sign a refusal form in the presence of a witness.</li> </ul>	
NOTE	<p><b>&lt;Cite examples.&gt;</b></p> <p><b>CONSENT</b></p>	
TR 2-17	<p><b>Implied consent:</b> Consent assumed on the part of an unconscious, confused or seriously injured patient or, for a minor patient (according to local legislation) that cannot make decisions.</p> <p>It is assumed that if the person were conscious, he or she would authorise care; likewise, one assumes that if a relative or the minor's guardian were present, he or she would authorise care.</p>	
TR 2-18	<p><b>Expressed consent:</b> Permission obtained from every responsive, competent adult patient before providing emergency care.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed		
FC 2-3	<p>A relative or legal guardian may give expressed consent to care for an unconscious, confused or seriously injured patient; or to a minor or mentally handicapped person.</p> <p>The MFR should know all the equipment and materials that he or she may need for personal protection as well as for providing care to the patient.</p> <h2>8. Basic Equipment of the MFR</h2> <h3>8.1 Basic personal protective equipment (PPE)</h3> <p><i>Emphasize use of PPE at all times, this will be covered more in lesson 3&gt;</i></p> <ul style="list-style-type: none"> <li>• Latex gloves</li> <li>• Personal mask</li> <li>• Eye protection</li> <li>• Gown</li> <li>• CPR mask</li> </ul> <h3>8.2 Basic Equipment for Pre-Hospital Care</h3> <table> <tr> <td> <ul style="list-style-type: none"> <li>• Kit</li> <li>• Dressings</li> <li>• Bandages</li> <li>• Tape</li> <li>• Eye guard</li> <li>• Tourniquet</li> <li>• Blankets</li> <li>• Sheets</li> <li>• Pillow</li> <li>• Splints</li> <li>• Bandage shears or scissors</li> <li>• Oxygen and accessories (optional)</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Backboard</li> <li>• Cervical collars (all sizes)</li> <li>• Penlight</li> <li>• Blood pressure cuff</li> <li>• Stethoscope</li> <li>• Disinfectant (Betadine)</li> <li>• Sterile water or normal saline</li> <li>• Activated charcoal</li> <li>• Aluminium foil</li> <li>• Tongue depressor</li> <li>• Childbirth kit</li> <li>• Oropharyngeal airways (all sizes)</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>• Kit</li> <li>• Dressings</li> <li>• Bandages</li> <li>• Tape</li> <li>• Eye guard</li> <li>• Tourniquet</li> <li>• Blankets</li> <li>• Sheets</li> <li>• Pillow</li> <li>• Splints</li> <li>• Bandage shears or scissors</li> <li>• Oxygen and accessories (optional)</li> </ul>	<ul style="list-style-type: none"> <li>• Backboard</li> <li>• Cervical collars (all sizes)</li> <li>• Penlight</li> <li>• Blood pressure cuff</li> <li>• Stethoscope</li> <li>• Disinfectant (Betadine)</li> <li>• Sterile water or normal saline</li> <li>• Activated charcoal</li> <li>• Aluminium foil</li> <li>• Tongue depressor</li> <li>• Childbirth kit</li> <li>• Oropharyngeal airways (all sizes)</li> </ul>	
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Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>III. REVIEW</i></b>  Review lesson objectives on page 1. <hr/> <b><i>IV. EVALUATION</i></b>  1) Give the participants 10 minutes to answer the evaluation and then review the evaluation.  2) Verify that the objectives of the lesson have been met. <hr/> <b><i>V. CLOSE</i></b>  <Comments or suggestions?>  <Thank the participants and introduce the next lesson.>	



## **Lesson 2**

### **Post-Test**

### **EMS and the MFR**

1. Describe the local EMS System.

*If there is no local EMS system, the participant will describe the EMS system given in the Course.*

2. List six duties and/or responsibilities of the MFR.

- *Protect your safety and the safety of your crew, the patient, and bystanders.*
- *Gain access to the patient.*
- *Assess the patient to identify life-threatening problems.*
- *Alert additional EMS resources.*
- *Provide care based on assessment findings.*
- *Assist other EMS personnel.*
- *Participate in record keeping and data collection as received.*
- *Act as liaison with other public safety workers.*
- *Perform patient packaging/preparation for movement and transportation.*

3. Define negligence and give an example as it relates to EMS.

*When a person has a duty to act, and fails to act or acts outside of the standard of care, and that failure or action outside of the standard of care caused harm, negligence has occurred.*

*Example: The MFR fails to monitor the vital signs of a trauma patient while transporting him/her to the hospital.*

4. Define abandonment and give an example as it relates to EMS.

*Discontinuing emergency medical care without making sure that another health care professional with equal or better training has taken over.*

*Example: When The MFR releases an unconscious patient to a nurse's aide upon arrival at the hospital.*

1

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Medical First Responder Course

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## **Qualities of the MFR**

- Responsibility
- Sociability
- Honesty
- Pride (hygiene, uniform, personal appearance)

*more ...*

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Rev. Feb 2002 FC 2-1

2

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Medical First Responder Course

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*...cont'd.*

## **Qualities of the MFR**

- Emotional stability
- Professional demeanour
- Good physical condition
- Demonstrated ability

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Rev. Feb 2002 FC 2-2

3

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Medical First Responder Course

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## **Basic Personal Protective Equipment**

- Latex gloves
- Personal mask
- Eye protection
- Gown
- CPR mask

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Rev. Feb 2002 FC 2-3



1

Medical First Responder Course

## Lesson 2 Objectives

- 1) Describe the emergency medical services (EMS) system in the area you reside.
- 2) List six duties and/or responsibilities of the medical first responder (MFR).

*more...*

Rev. Feb 2002 TR2-1

2

...cont'd.

Medical First Responder Course

## Lesson 2 Objectives

- 3) Define negligence and give an example as it relates to EMS.
- 4) Define abandonment and give an example as it relates to EMS.

*more...*

Rev. Feb 2002 TR2-2

3

...cont'd.

Medical First Responder Course

## Lesson 2 Objectives

- 5) Define implied consent and expressed consent.

*more...*

Rev. Feb 2002 TR2-3

4

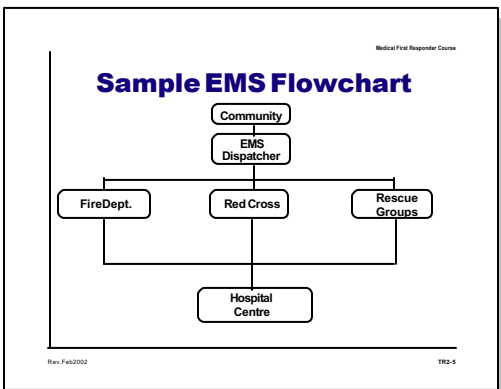
Medical First Responder Course

## Emergency Medical Services System (EMS)

A network of resources linked together for the purpose of providing emergency care and transport to victims of sudden illness or injury.

Rev. Feb 2002 TR2-4

5



6

Medical First Responder Course

## Medical First Responder

The first person on the scene of an incident with emergency medical care skills, typically trained at the most basic EMS level.

Rev. Feb 2002 TR2-6

7

Medical First Responder Course

## Duties of the MFR

1. Protect your safety and the safety of your crew, the patient, and bystanders
2. Gain access to the patient
3. Assess the patient to identify life-threatening problems

*more...*

Rev. Feb2002 TR2-7

8

Medical First Responder Course

*...cont'd.*

## Duties of the MFR

4. Alert additional EMS resources
5. Provide care based on assessment
6. Assist other EMS personnel

*more...*

Rev. Feb2002 TR2-8

9

Medical First Responder Course

*...cont'd.*

## Duties of the MFR

7. Participate in record-keeping and data collection as received
8. Act as liaison with other public safety workers
9. Perform patient packaging and preparation for movement and transport

Rev. Feb2002 TR2-9

10

Medical First Responder Course

## Scope of Care

Actions that are legally allowed by the MFR when providing patient care.

Rev. Feb2002 TR2-10

11

Medical First Responder Course

## Duty to Act

The contractual or legal obligation on the MFR to provide care.

Rev. Feb2002 TR2-11

12

Medical First Responder Course

## Abandonment

Discontinuing emergency medical care without making sure that another health care professional with equal or better training has taken over.

Rev. Feb2002 TR2-12

13

Medical First Responder Course

## Negligence

Failure to provide the expected standard of care, causing injury or death of the patient.

Rev. Feb2002 TR2-13

14

Medical First Responder Course

## Rights of the Patient

- To solicit and receive pre-hospital care
- To confidentiality regarding personal information and condition
- To pursue legal recourse for acts of negligence, abandonment, and/or violations of confidentiality

*more...*

Rev. Feb2002 TR2-14

15

...cont'd.

Medical First Responder Course

## Rights of the Patient

- In some situations, the patient has the right to refuse care. The patient may be required to sign a refusal form in the presence of a witness

Rev. Feb2002 TR2-15

16

Medical First Responder Course

## Implied Consent

Consent assumed on the part of an unconscious, confused or seriously injured patient or, for a minor patient that cannot make decisions.

Rev. Feb2002 TR2-16

17

Medical First Responder Course

## Expressed Consent

Permission obtained from every responsive, competent adult patient before providing emergency care.

Rev. Feb2002 TR2-17



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## Medical First Responder Course

# Lesson Plan 3

# Infectious Disease and Precautions

**Suggested Duration:** 1 hour

**Materials:**

- Overhead projector
- Transparencies
- Flipcharts
- Markers
- Handout 03-1
- Full personal protective equipment
- Extension cord
- Projection screen.

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Define infectious disease.
2. Describe the two means of transmission of infectious diseases.
3. List eight signs and symptoms of infectious disease.
4. List three categories of body substance isolation precautions.
5. List five components of the personal protective equipment (PPE) used during patient assessment and pre-hospital treatment.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 3-1 TR 3-2	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduction of instructor and assistant instructors.</li> <li>2. Presentation of the lesson.</li> <li>3. Presentation of lesson objectives (have the participants read aloud course objectives from manual).</li> </ol>	
TR 3-3	<p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Infectious Diseases</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Illnesses caused by pathogens, microorganisms such as bacteria or viruses, that can be transmitted.</p> </div>	
TR 3-4	<p><b>1.1 Methods of TRANSMISSION</b></p> <ul style="list-style-type: none"> <li>• <b>Direct contact:</b> Which occurs through contact with bodily fluids, contact through open wounds or exposed tissues, or contact with mucous membranes of the mouth, eyes or nose.</li> </ul>	
TR 3-5	<ul style="list-style-type: none"> <li>• <b>Indirect contact:</b> Through airborne pathogens spread by tiny droplets sprayed during breathing, coughing or sneezing, or by way of contaminated objects, such as needles.</li> </ul>	
FC 3-1	<p><b>1.2 Diseases of Concern</b></p> <p>As a medical first responder, you can be exposed to infectious diseases whenever you treat a patient. Although there are many infectious diseases, three that are of greatest concern because they are life-threatening are:</p> <ul style="list-style-type: none"> <li>• <b>Hepatitis (A, B, C, D and E):</b> Causes inflammation of the liver; contracted through blood or bodily fluids; no cure, can be deadly; can live in dried blood for days. Effective vaccine is available.</li> <li>• <b>Tuberculosis (TB):</b> Infection found in the lungs and other tissues; highly contagious—can be spread through the air; take respiratory precautions.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 3-2</b></p> <p><b>FC 3-3</b></p> <p><b>TR 3-6</b></p> <p><b>TR 3-7</b></p>	<ul style="list-style-type: none"> <li>• <b>Acquired Immune Deficiency Syndrome (AIDS):</b> AIDS is the name for a set of conditions that result when the immune system has been attacked by the HIV virus, and rendered unable to combat infections adequately. Poses less risk than hepatitis or TB, as the virus does not survive well outside the human body. Transmission requires contact with the bodily fluids of infected persons.</li> </ul> <p>There are several other infectious diseases that you may be exposed to, including:</p> <ul style="list-style-type: none"> <li>• Influenza</li> <li>• Cholera</li> <li>• Sexually transmitted diseases (STD's)</li> <li>• Common cold</li> <li>• Dengue</li> <li>• Typhoid</li> <li>• Meningitis</li> </ul> <p><b>&lt;Ask participants to write down other infectious diseases that are common in their country.&gt;</b></p> <h2><b>2. Signs and Symptoms</b></h2> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p>Patients contaminated with an infectious disease may not present with signs or symptoms. A major source of infectious transmission is the “chronic carrier”. Such a person can carry an infection for years without signs or symptoms.</p> </div> <p>When signs and symptoms of infectious disease do appear, they may include:</p> <ul style="list-style-type: none"> <li>• Fever</li> <li>• Nausea</li> <li>• Yellowish coloration of the skin and whites of the eyes</li> <li>• Headache, chest or abdominal pain</li> <li>• Coughing or shortness of breath</li> <li>• Diarrhoea</li> <li>• Fatigue</li> <li>• Weight loss</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 3-8</p> <p>FC 3-4</p> <p>NOTE</p>	<h3>3. Body Substance Isolation (BSI)</h3> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> A strict form of infection control based on the premise that blood and other bodily fluids are infectious.</p> </div> <p>Body substance isolation (BSI) consists of a combination of equipment and procedures that protect you from the bodily fluids of the patient. With BSI precautions, it is possible to take care of patients safely, including those with infectious diseases. BSI precautions fall under three categories:</p> <ol style="list-style-type: none"> <li>1) <b>Hand-washing:</b> The single most important thing you can do to prevent the spread of infection (even if wearing gloves).</li> <li>2) <b>Cleaning equipment:</b> Cleaning, disinfecting, and sterilising are related terms. <i>Cleaning</i> is simply washing an object with soap and water. <i>Disinfecting</i> is cleaning plus using a chemical like alcohol or bleach to kill most of the pathogens. <i>Sterilising</i> is a process in which a chemical or other process (such as superheated steam) is used to kill all microorganisms on the object.</li> <li>3) <b>Using personal protective equipment (PPE):</b> You must always use PPE to protect against infection. This will keep you from coming into contact with blood and other bodily fluids. PPE includes eye protection, gloves, gown and mask.</li> </ol> <p><b>&lt;Demonstrate the use of all personal protective equipment.&gt;</b></p> <h4>3.1 Personal Protective Equipment</h4> <p>The five most common components of PPE are:</p> <ul style="list-style-type: none"> <li>• Latex gloves</li> <li>• Personal mask</li> <li>• Eye protection</li> <li>• Gown</li> <li>• CPR mask</li> </ul> <p><b>IMPORTANT:</b></p> <ul style="list-style-type: none"> <li>• Always discard contaminated items properly.</li> <li>• Your safety and the safety of others is a risk from cross-contamination.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 3-9</p> <p>TR 3-10</p>	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-bottom: 20px;"> <p><b>All bodily fluids are considered infectious and you must take appropriate precautions for all patients at all times!!</b></p> </div> <p><b>4. Immunisation</b></p> <p>The following immunisations are recommended for active duty MFR's:</p> <ul style="list-style-type: none"> <li>• Tetanus prophylaxis (every 10 years)</li> <li>• Hepatitis-A Vaccine</li> <li>• Hepatitis-B Vaccine</li> <li>• Influenza vaccine (every year)</li> <li>• Polio</li> <li>• Rubella (German measles)</li> <li>• Measles</li> <li>• Mumps</li> </ul> <p>Though there is no current immunization for tuberculosis, you should be checked for exposure to the disease yearly. Consult your local protocols for immunisations.</p> <p><b>5. Reporting Exposures</b></p> <p>Report any suspected exposure to blood or bodily fluids to your supervisor as soon as possible. Include in your report the date and time of the exposure, the type and the amount of bodily fluids involved, and details of the incident. All agencies should have a written policy in place to handle exposures to infectious body substances.</p> <hr/> <p><b>III. REVIEW</b></p> <p style="text-align: center;"><b>&lt;Review objectives from Page 1 to ensure participants have understood them clearly.&gt;</b></p> <hr/> <p><b>IV. EVALUATION</b></p> <ol style="list-style-type: none"> <li>1. Respond to evaluation forms.</li> <li>2. Verify that participants have achieved the stated objectives.</li> </ol> <hr/> <p><b>IV. CLOSE</b></p> <ol style="list-style-type: none"> <li>1. Comments, suggestions.</li> <li>2. Thank everyone for their participation and announce next lesson.</li> </ol>	





## **Lesson 3**

### **Post-Test**

# **Infectious Disease and Precautions**

1. Define infectious disease.

*Infectious diseases are illnesses caused by pathogens, microorganisms such as bacteria or viruses, that can be transmitted.*

2. Describe the two methods of transmission of infectious diseases.

- *Direct contact*
- *Indirect contact*

3. List eight possible signs and symptoms of infectious disease.

- *Fever*
- *Profuse sweating*
- *Yellowish coloration of the skin and whites of the eyes*
- *Headache, chest or abdominal pain*
- *Coughing or shortness of breath*
- *Diarrhoea*
- *Fatigue*
- *Weight loss*

4. List three categories of body substance isolation precautions.

- *Handwashing*
- *Cleaning/disinfecting/sterilising*
- *Using PPE*

5. List five components of the personal protective equipment (PPE) used for patient assessment and during pre-hospital treatment.

- *Latex gloves*
- *Personal mask*
- *Eye Protection*
- *Gown*
- *CPR mask*

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## **Infectious Diseases of Greatest Concern**

- Hepatitis (A,B,C,D,E)
- Tuberculosis (TBC)
- AIDS (HIV)

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## **Other Common Infectious Diseases**

- Influenza
- Cholera
- Sexually transmitted diseases (STD's)

*more*

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*...cont'd.*

## **Other Common Infectious Diseases**

- Common cold
- Dengue
- Typhoid
- Meningitis

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## **Body Substance Isolation (BSI)**

- Wash hands
- Clean, disinfect and sterilise equipment
- Use full PPE

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## Lesson 3 Objectives

1. Define infectious disease.
2. Describe the two means of transmission of infectious disease.
3. List eight signs and symptoms of infectious disease.

*more...*

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## Lesson 3 Objectives

4. List three categories of body substance isolation precautions.
5. List five components of the personal protective equipment (PPE) used for patient assessment and during pre-hospital treatment.

*more...*

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## Infectious Diseases

Illnesses caused by pathogens, microorganisms such as bacteria or viruses, that can be transmitted.

*more...*

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## Means of Transmission

- **Direct contact:** Which occurs through contact with bodily fluids, contact through open wounds or exposed tissues, or contact with mucous membranes of the mouth, eyes or nose.

*more...*

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...cont'd.

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## Means of Transmission

- **Indirect contact:** Through airborne pathogens spread by tiny droplets sprayed during breathing, coughing or sneezing, or by way of contaminated objects, such as needles.

*more...*

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## Infectious Disease

### Signs and Symptoms

- Fever
- Nausea
- Yellowish coloration of the skin and whites of the eyes
- Headache, chest or abdominal pain

*more...*

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...cont'd.

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## Infectious Disease

*Signs and Symptoms*

- Coughing, shortness of breath
- Diarrhoea
- Fatigue
- Weight loss

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## Body Substance Isolation


A strict form of infection control based on the premise that blood and bodily fluids are infectious.

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## DANGER!



All bodily fluids are considered infectious and you must take appropriate precautions for all patients at all times!

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*Always practice  
body substance isolation  
so YOU don't  
get infected!*

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## Medical First Responder Course

# Lesson Plan 4 The Incident

**Suggested Duration:** 1 hour, 45 minutes

**Preparation:** Select 3 slides from SL 4-1 to SL 4-8 for use in Exercise 4-2.

**Materials:**

- Overhead projector
- Transparencies
- Slide projector
- Slides
- Projection screen
- Chalkboard or flipchart
- Handouts
- Basic hand tools

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) List the five items of information to obtain when receiving a call for assistance.
- 2) List five factors to consider when responding to a call.
- 3) List the three steps for scene size-up, in proper order.
- 4) List the six items of information that should be included in the initial report when arriving at the scene.
- 5) List the three priorities when securing the scene.
- 6) List five basic tools used to gain access to a patient trapped in a vehicle.
- 7) List two ways to gain access to a patient trapped in a vehicle.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 4-1 TR 4-2 TR 4-3	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce instructors and assistants.</li> <li>2) Present the lesson.</li> <li>3) Present lesson objectives.</li> </ol>	
TR 4-4	<p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. The Incident</b></p> <p>This concept will be mentioned frequently so it is important that we define it clearly.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> An event caused by a natural phenomenon or human activity that requires the intervention of emergency service personnel to prevent or mitigate loss of life and damage to property and the environment.</p> </div>	
FC 4-1	<p><b>2. Call for Assistance</b></p> <p><b>&lt;Ask two participants to write on the flipcharts. Ask the group to provide examples of information they think are important to be obtained when a call for assistance is received.&gt;</b></p> <p><b>Information to Obtain</b></p> <p>Obtain the following five items of information when receiving a call for assistance:</p> <ul style="list-style-type: none"> <li>• Address/location of the incident.</li> <li>• Identify the origin of the call (telephone, radio, in-person, etc.)</li> <li>• Incident type (what is happening)</li> <li>• Victims (quantity and condition).</li> <li>• Actions taken.</li> </ul> <p><b>EXERCISE 4-1: Documenting a Request for Assistance.</b></p> <p><b>&lt;NOTE: Remain strict with the time allotted for the exercise. WB has forms on page 4-3, &amp; 4. LP forms are on 4-8, 9, &amp; 10.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>FC 4-2</b></p> <p><b>FC 4-3</b></p>	<p><b>3. Response</b></p> <p><b>&lt;Give examples of each factor and explain how it affects the handling of the incident.&gt;</b></p> <p>When responding to a call, you should consider, among others, the following factors:</p> <ul style="list-style-type: none"> <li>• Day of the week (traffic, etc.)</li> <li>• Time of day (school, business hours, people at home, etc.)</li> <li>• Weather (rain, wind, storms, etc.)</li> <li>• Social disturbances, riots</li> <li>• Topography (winding roads, etc.)</li> <li>• Hazardous materials (fuel leaks, radiation, etc.)</li> <li>• Access routes (freeways, crossings, bridges, height, width, road maintenance, land mines, etc.)</li> <li>• Power lines</li> <li>• Proper vehicle placement</li> </ul> <p><b>&lt;Ask participants: “Any additional factors not covered?”&gt;</b></p> <p><b>4. Types of Incidents</b></p> <p><b>&lt;Give examples of each factor and explain how it affects the handling of the incident.&gt;</b></p> <ul style="list-style-type: none"> <li>• Motor vehicle collision</li> <li>• Structural fire</li> <li>• Natural phenomenon</li> <li>• Water rescue</li> <li>• Medical emergency</li> <li>• Hazardous materials</li> <li>• Structural collapse</li> <li>• Electrical</li> <li>• Aircraft accident</li> </ul> <p><b>5. Scene Size-Up</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px;"> <p><b>Definition:</b> The evaluation of factors that are used in the decision-making process to establish the strategy and tactics to be used in a particular incident.</p> </div> <p>Ongoing evaluation of the incident begins when the call is received and continues until the incident is successfully mitigated.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 4-5	<p><b>5.1 Scene Size-Up Criteria</b></p> <p>Using the following criteria for scene size-up, in this order:</p> <p><b>&lt;Allow time for participants to copy.&gt;</b></p> <ol style="list-style-type: none"> <li>What is the current situation? (Determine actual state.)</li> <li>Where is it going? (Determine potential situation.)</li> <li>How do I control it? (Determine operations and resources needed)</li> </ol>	
TR 4-6	<p><b>5.2 Reporting</b></p> <p><b>&lt;Discuss local protocol&gt;</b></p> <p>The following information should be included in the initial report:</p> <ol style="list-style-type: none"> <li>Address/location</li> <li>Type of incident</li> <li>Environmental conditions</li> <li>Current situation</li> <li>Number of victims</li> <li>Resources needed</li> </ol>	
NOTE	<p><b>EXERCISE 4-2: Scene Assessment.</b></p> <p>From the slides available, select three different images of incidents that commonly occur in their region.</p> <p><b>&lt;Remain strict with the time allotted for the exercise. WB forms are on page 4-8, 9, &amp;10. LP forms are on 4-11, 12, 13, &amp;15.&gt;</b></p>	
TR 4-7	<p><b>6. Securing the Scene</b></p> <p>There are three priorities for securing the scene:</p> <ol style="list-style-type: none"> <li><b>Place your vehicle properly.</b> On arrival, if no hazards are present, and other units are on the scene, park 20 metres past the scene. If your unit is first, block the scene with your vehicle 20 metres before, until other units arrive.</li> <li><b>Isolate and mark the scene.</b> Use flares, tape, or other warning devices.</li> <li><b>Mitigate risks.</b> Disconnect the car battery (negative terminal), shut off the gas, extinguish fire, manage traffic hazards, secure electrical, stabilize vehicle, etc.</li> </ol> <p><b>&lt;Use FC 4-4 to illustrate different incident scenarios and discuss securing the scene.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 4-4	<h2>7. Gaining Access</h2> <p><b>&lt;This section does not try to qualify the MFR to make forced entry with specialized equipment; it simply shows how to gain access through the natural entrances of a structure/ vehicle using basic tools.&gt;</b></p> <p>The MFR should always analyse the need for personal protection such as helmet, eye protection, mask, self-contained breathing apparatus, gloves, etc. <i>before</i> attempting to gain access to a patient.</p> <p>In case the incident occurs in water, cliffs, etc., the MFR should request assistance from specially trained personnel.</p>	
NOTE	<h3>7.1 Basic Tools</h3> <p><b>&lt;Show the tools and ask participants to write the names they use locally in their workbooks. Proper use of each tool is beyond the scope of this course.&gt;</b></p> <ul style="list-style-type: none"> <li>• Pliers</li> <li>• Screwdriver</li> <li>• Tinsnips</li> <li>• Hammer</li> <li>• Knife</li> <li>• Rope</li> <li>• Kellytool</li> <li>• Pry bar</li> <li>• Vise grip</li> <li>• Axe</li> <li>• Hacksaw</li> <li>• Rubber mallet</li> <li>• Automatic centre punch</li> <li>• Personal protective equipment</li> </ul>	
TR 4-8 TR 4-9 TR 4-10	<h3>7.2 Gaining access to buildings</h3> <p><b>&lt;Remind participants that personal safety is paramount.&gt;</b></p> <p>Always look for alternate means of entry. Consider the easiest route for entry and exit based on the situation and the patient's needs.</p> <p><b>DOORS</b></p> <ul style="list-style-type: none"> <li>• <b>With padlock:</b> Insert the tip of the Kelly tool in the eye of the padlock bolt and use it as a lever to open the padlock.</li> <li>• <b>Solid door:</b> Before using force, notice whether the door opens in or out. If it opens out, it may be possible to remove the hinges.</li> </ul> <p><b>WINDOWS</b></p> <ul style="list-style-type: none"> <li>• A glass window should only be forced as a last resort.</li> <li>• If you need to break a window, protect yourself properly and use a pointed tool.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>7.3 GAINING ACCESS TO VEHICLES USING BASIC TOOLS</b></p> <p><b>&lt;Vehicle extrication is a very technical subject, requiring training which is beyond the scope of this course.&gt;</b></p> <p><b>&lt;Use slides as a guide.&gt;</b></p> <p>Generally and if possible, medical treatment should begin before the patient is extricated. The patient should be removed in such a way as to minimize further injury. Access may be simple (not requiring tools) or complex (requiring tools and special training). Take only those steps you are trained to take. Call for additional resources.</p> <p>You may find a vehicle in several positions:</p> <ul style="list-style-type: none"><li>• Upright</li><li>• On its side</li><li>• On its roof</li></ul> <p><b>DOORS</b></p> <ul style="list-style-type: none"><li>• “Try before you pry.”</li><li>• Ask the patient to assist in opening the door, either by unlocking or rolling down the window.</li><li>• Do the doors require forced entry? If so, use a pry bar or hydraulic tools.</li></ul> <p><b>WINDOWS</b></p> <ul style="list-style-type: none"><li>• Make sure patient is protected from glass particles.</li><li>• Use a screwdriver or other pointed tool. Strike tool against lower corner of window and continue to strike in the same spot until the window shatters. If you must break a window, choose the one that is farthest from the patient.</li><li>• Rear and side window are made of tempered glass, which shatters into small granules. The windscreen is laminated and can be removed in one piece.</li></ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>III. REVIEW</i></b>  <b><i>&lt;Review objectives from page 1 and ensure everyone has understood them clearly.&gt;</i></b> <hr/> <b><i>IV. EVALUATION</i></b>  <ol style="list-style-type: none"><li>1) Give the participants 10 minutes to complete the evaluation and then review the evaluation.</li><li>2) Verify that the objectives of the lesson have been met.</li></ol> <hr/> <b><i>V. CLOSE</i></b>  <ol style="list-style-type: none"><li>1) Ask if there are any comments or suggestions.</li><li>2) Thank the participants and introduce the next lesson.</li></ol>	



## **EXERCISE 4-1**

### **Documenting a Request for Assistance**

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#### **Instructions**

##### **Exercise Objective:**

To fill out the call reception form completely and accurately in less than two minutes.

**Total time of exercise:**                      **10 minutes**

##### **Method:**

Divide the class into pairs. One participant from each pair will be the person requesting assistance and the other will be the call-taker.

Participant pairs will face each other across a table so that the receiver can complete the form.

The participant calling for assistance will create an incident that involves one to five victims and will communicate with the call-taker, simulating talking on the phone.

The call-taker will have a maximum of two minutes to request the necessary information and to complete the form. After two minutes, the participants will switch roles.

Once completed, the instructor will randomly select four or five participants to read their forms and comment on them.



**EXERCISE 4-1:  
Documenting A Request For Assistance  
Sample Form**

Incident number:

Time of the call:

Date:

Incident location: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Origin of the call: ☐ Telephone ☐ Radio ☐ Personal Other: \_\_\_\_\_

Name and location of person making the call: \_\_\_\_\_

\_\_\_\_\_

Incident type:

☐ Traffic

☐ Structural fire

☐ Natural disaster

☐ Marine

☐ Medical

☐ Haz-Mat

☐ Structural Collapse

☐ Other \_\_\_\_\_

Brief explanation of situation:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Documenting A Request For Assistance  
Sample Form (cont'd.)**

**VICTIM(S):**

Number:

Actions underway at the scene:

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Other pertinent information:

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Name or identification of person receiving the call:

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Other information if any given:



## **Exercise 4-2 Scene Assessment**

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### **Instructions**

#### **Exercise Objective:**

Given three (3) still images of three (3) different incidents, you will have two (2) minutes per image to assess each scene using the steps learned in this lesson, and report that information in a proper sequence. Use your WB as a reference guide.

Once completed, the instructor will randomly select several participants to share their assessments.

**Total time of exercise:**                      **20 minutes**



## Exercise 4-2 Image 1

### Scene Size-up

What is the current situation?

---

---

---

What is the potential situation?

---

---

How do I control it? (operations and resources needed)

---

---

### GUIDE TO REPORTING SCENE INFORMATION (TO DISPATCH OFFICE)

Address/location \_\_\_\_\_

---

Type of incident \_\_\_\_\_

---

Environmental conditions \_\_\_\_\_

---

Problems present \_\_\_\_\_

---

Number of victims \_\_\_\_\_

Resources needed \_\_\_\_\_

---





## Exercise 4-2 Image 2

### SCENE Size-up

What is the current situation?

---

---

---

What is the potential situation?

---

---

How do I control it? (operations and resources needed)

---

---

### GUIDE TO REPORTING SCENE INFORMATION (TO DISPATCH OFFICE)

Address/location \_\_\_\_\_

---

Type of incident \_\_\_\_\_

---

Environmental conditions \_\_\_\_\_

---

Problems present \_\_\_\_\_

---

Number of victims \_\_\_\_\_

Resources needed \_\_\_\_\_

---



## Exercise 4-2 Image 3

### SCENE Size-up

What is the current situation?

---

---

---

What is the potential situation?

---

---

How do I control it? (operations and resources needed)

---

---

### GUIDE TO REPORTING SCENE INFORMATION (TO DISPATCH OFFICE)

Address/location \_\_\_\_\_

---

Type of incident \_\_\_\_\_

---

Environmental conditions \_\_\_\_\_

---

Problems present \_\_\_\_\_

---

Number of victims \_\_\_\_\_

Resources needed \_\_\_\_\_

---



## Lesson 4

### Post-Test

### The Incident

1. List the five items of information to obtain when receiving a call for assistance.
  - *Address/location of the incident*
  - *Identify the origin of the call (telephone, radio, in-person, etc.)*
  - *Incident type (what is happening)*
  - *Victims (quantity and condition)*
  - *Actions taken*
2. List five factors to consider when responding to a call.
  - *Day of the week (traffic, etc.)*
  - *Time of day (school, business hours, people at home, etc.)*
  - *Weather (rain, wind, storms, etc.)*
  - *Social disturbances, riots*
  - *Topography (winding roads, etc.)*
  - *Hazardous materials (fuel leaks, radiation, etc.)*
  - *Access routes (freeways, crossings, bridges, height, width, road maintenance, land mines, etc.)*
  - *Power lines*
  - *Proper vehicle placement*
3. List the three steps to scene size-up, in proper order.
  - a. *What is the current situation? (Determine actual state.)*
  - b. *Where is it going? (Determine potential situation.)*
  - c. *How do I control it? (Determine operations and resources needed)*
4. List the six items of information that should be included in the initial report to the dispatch office when arriving at the scene.
  - *Address/Location*
  - *Type of incident*
  - *Environmental conditions*
  - *Current situation*
  - *Number of victims*
  - *Resources needed*
5. List the three steps to secure the scene.
  - a. *Place your vehicle properly. On arrival, if no hazards are present, and other units are on the scene, park 20 metres past the scene. If your unit is first, block the scene with your vehicle 20 metres before, until other units arrive.*
  - b. *Isolate and mark the scene. Use flares, tape, or other warning devices.*
  - c. *Mitigate risks. Disconnect car battery (negative terminal), shut off the gas, extinguish fire, manage traffic hazards, secure electrical, stabilize vehicle, etc.*



## Lesson 4

### Post-Test (cont'd.)

3. List five basic tools used to gain access to a patient trapped in a vehicle.
  - *Pliers*
  - *Screwdriver*
  - *Tin snips*
  - *Hammer*
  - *Knife*
  - *Rope*
  - *Kelly tool*
  - *Pry bar*
  - *Vise grip*
  - *Axe*
  - *Hacksaw*
  - *Rubber mallet*
  - *Automatic centre punch*
  - *Personal protective equipment*
4. List two ways to gain access to a patient trapped in a vehicle.
  - *Opening or prying open a door*
  - *Breaking a window*

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## Information to Obtain

- Location/address of the incident
- Identify the origin of the call
- Incident type
- Victims
- Actions taken

---

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FC 4-1

2

Medical First Responder Course

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## Type of Incident

- Motor vehicle collision
- Structural fire
- Natural phenomenon
- Water rescue

*more...*

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FC 4-2

3

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*...cont'd.*

## Type of Incident

- Medical emergency
- Hazardous materials
- Structural collapse
- Electric
- Aircraft accident

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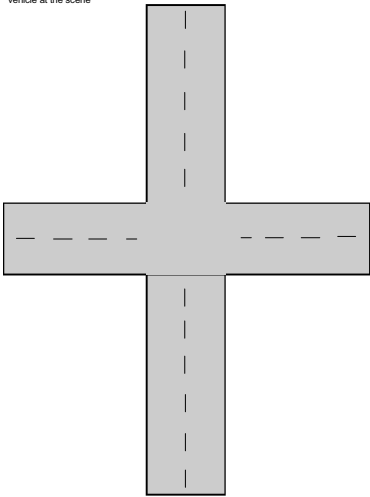
FC 4-3

4

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Location of emergency vehicle at the scene



The diagram shows a gray cross-shaped road intersection. Each of the four road segments (vertical and horizontal) has a dashed line running down its center, representing the centerline of the road.

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FC 4-4

1

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## Lesson 4 Objectives

- 1) List the five items of information to obtain when receiving a call for assistance.
- 2) List five factors to consider when responding to a call.
- 3) List the three steps for scene size-up, in proper order.

*more...*

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2

Medical First Responder Course

*...cont'd.*

## Lesson 4 Objectives

- 4) List the six items of information that should be included in the initial report when arriving at the scene.
- 5) List three priorities when securing the scene.

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3

Medical First Responder Course

*...cont'd.*

## Lesson 4 Objectives

- 6) List five basic tools used to gain access to a patient trapped in a vehicle.
- 7) List two ways to gain access to a patient trapped in a vehicle.

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4

Medical First Responder Course

## Incident

An event caused by a natural phenomenon or human activity that requires the intervention of emergency service personnel to prevent or mitigate loss of life and damage to property and the environment.

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5

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## Steps to Assess the Scene

- What is the current situation?
- Where is it going?
- How do I control it?  
(operations and resources needed)

Rev. Feb 2002 TR4-5

6

Medical First Responder Course

## Reporting

- Address/Location
- Incident type
- Environmental conditions
- Current situation
- Number of victims
- Resources needed

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7

Medical First Responder Course

## Securing the Scene

- Place vehicle properly
- Isolate and mark the scene
- Mitigate risks

Rev Feb2002 TR4-7

8

Medical First Responder Course


## Basic Tools

- Pliers
- Screwdriver
- Tin snips
- Hammer
- Knife
- Rope
- Kelly Tool
- Pry bar
- Vise Grip
- Axe
- Hacksaw
- Rubber mallet
- Automatic center punch
- Personal protective equipment

Rev Feb2002 TR4-8

9


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Rev Feb2002 TR4-9

10

Medical First Responder Course

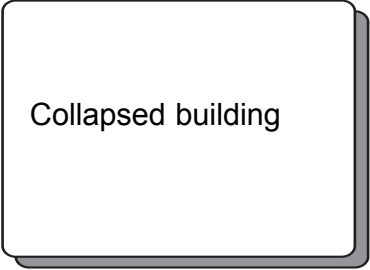
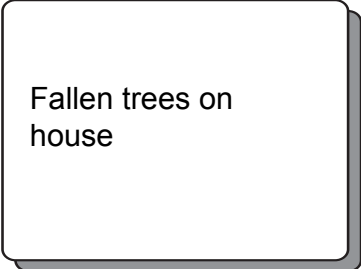
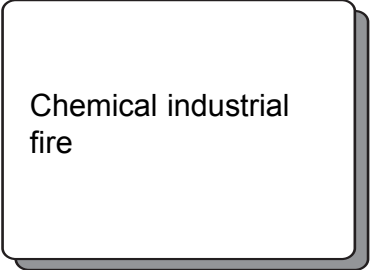
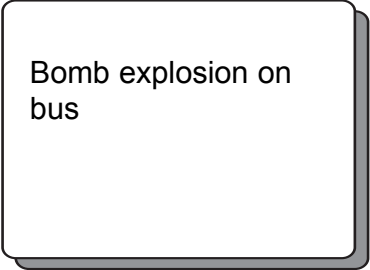
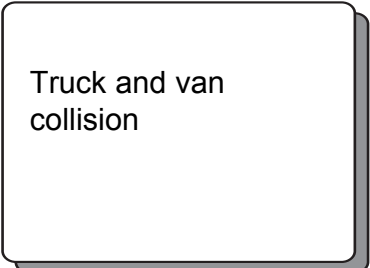


Rev Feb2002 TR4-10

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**SLIDE PROGRAMME GUIDE**  
**LESSON 4: THE INCIDENT**

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Slide Name	Slide Number and Description
 <p>Collapsed building</p>	<p><b>SL 4-1</b></p> <p>To be used in scene assessment.</p>
 <p>Fallen trees on house</p>	<p><b>SL 4-2</b></p> <p>To be used in scene assessment.</p>
 <p>Chemical industrial fire</p>	<p><b>SL 4-3</b></p> <p>To be used in scene assessment.</p>
 <p>Bomb explosion on bus</p>	<p><b>SL 4-4</b></p> <p>To be used in scene assessment.</p>
 <p>Truck and van collision</p>	<p><b>SL 4-5</b></p> <p>To be used in scene assessment.</p>

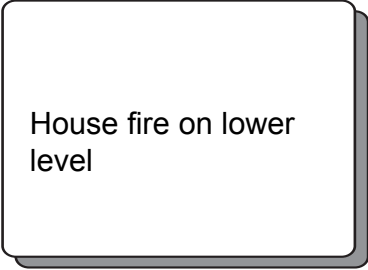

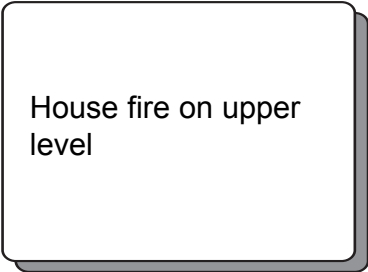

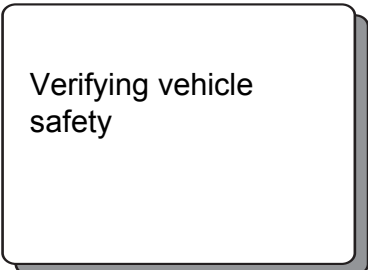


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## SLIDE PROGRAMME GUIDE

### LESSON 4: THE INCIDENT

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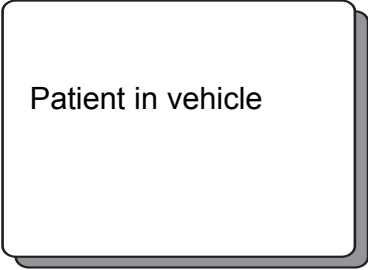
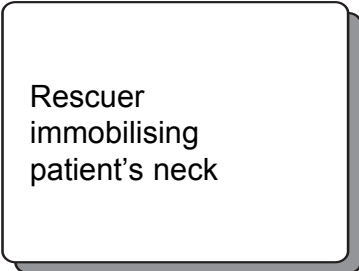
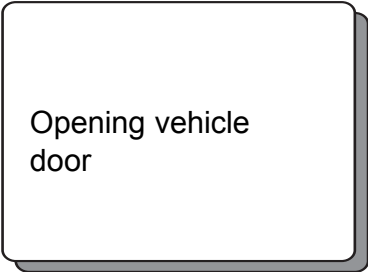
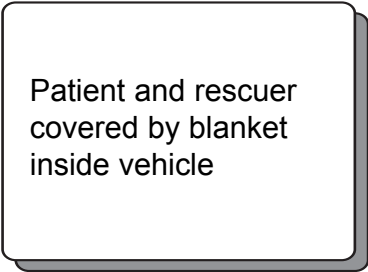
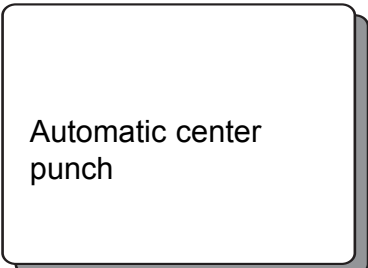
Slide Name	Slide Number and Description
 <p>House fire on lower level</p>	<b>SL 4-6</b>  To be used in scene assessment.
 <p>Crashed airplane</p>	<b>SL 4-7</b>  To be used in scene assessment.
 <p>House fire on upper level</p>	<b>SL 4-8</b>  To be used in scene assessment.
 <p>Basic tools</p>	<b>SL 4-9</b>  Basic tools for extrication of patient from a vehicle.
 <p>Verifying vehicle safety</p>	<b>SL 4-10</b>  Before attempting to access a vehicle, assess its stability and potential risks.

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## **SLIDE PROGRAMME GUIDE**

### **LESSON 4: THE INCIDENT**

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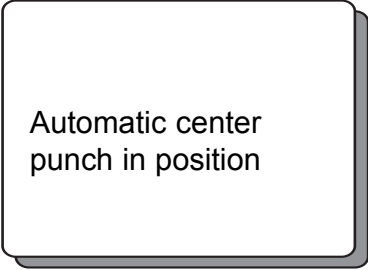
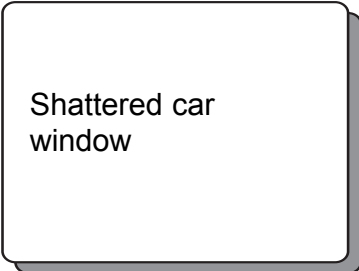
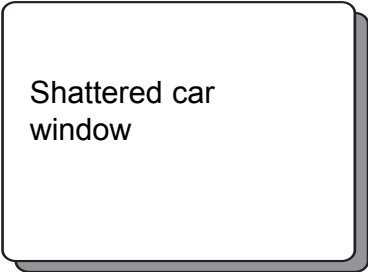
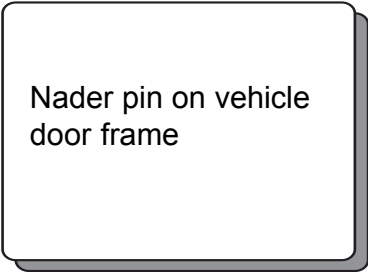

<b>Slide Name</b>	<b>Slide Number and Description</b>
 <p>Patient in vehicle</p>	<b>SL 4-3</b>  Patient seated in vehicle.
 <p>Rescuer immobilising patient's neck</p>	<b>SL 4-12</b>  Rescuer immobilising patient's neck.
 <p>Opening vehicle door</p>	<b>SL 4-13</b>  Rescuer pening vehicle door.
 <p>Patient and rescuer covered by blanket inside vehicle</p>	<b>SL 4-14</b>  Patient and rescuer must be covered by blanket before forcing the door or breaking the window.
 <p>Automatic center punch</p>	<b>SL 4-15</b>  Automatic center punch is used to shatter car

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## SLIDE PROGRAMME GUIDE

### LESSON 4: THE INCIDENT

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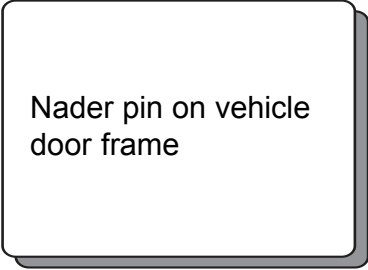
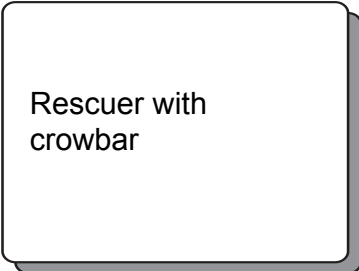
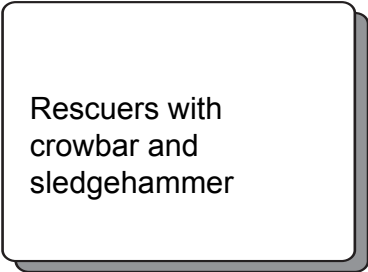
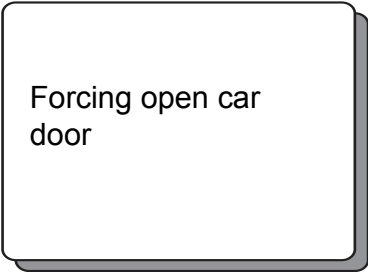
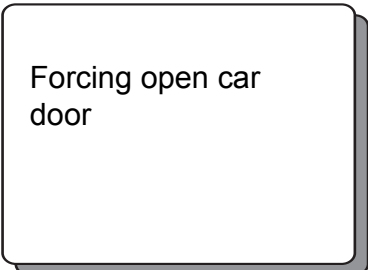
Slide Name	Slide Number and Description
	<b>SL 4-16</b>  Lean on your free hand against the door frame to prevent penetrating the glass and causing injury to the patient and rescuer.
	<b>SL 4-17</b>  Shattered car window
	<b>SL 4-18</b>  Shattered car window
	<b>SL 4-19</b>  Nader pin on vehicle door frame
	<b>SL 4-20</b>  Nader pin on vehicle door frame

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## SLIDE PROGRAMME GUIDE

### LESSON 4: THE INCIDENT

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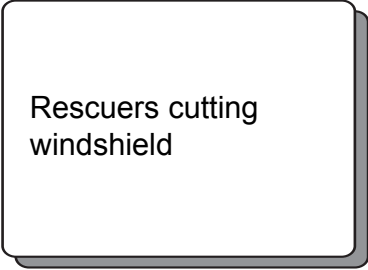

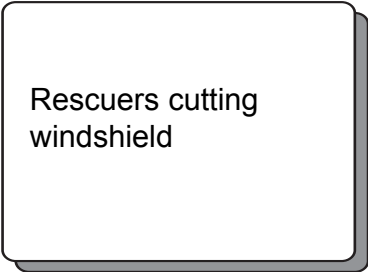
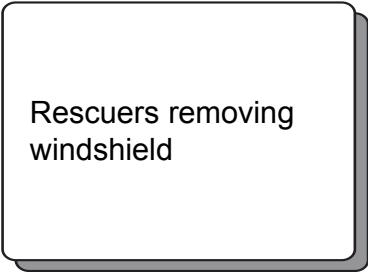
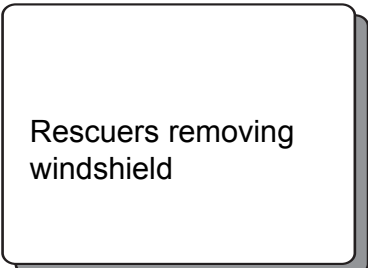
Slide Name	Slide Number and Description
 <p>Nader pin on vehicle door frame</p>	<b>SL 4-21</b>  Nader pin on vehicle door frame
 <p>Rescuer with crowbar</p>	<b>SL 4-22</b>  Rescuer with inserting crowbar tip into door frame above Nader pin.
 <p>Rescuers with crowbar and sledgehammer</p>	<b>SL 4-23</b>  Rescuers using crowbar and sledgehammer to access Nader pin.
 <p>Forcing open car door</p>	<b>SL 4-24</b>  Forcing open the car door by applying leverage to the crowbar.
 <p>Forcing open car door</p>	<b>SL 4-25</b>  Forcing open the car door by applying leverage to the crowbar.

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## SLIDE PROGRAMME GUIDE

### LESSON 4: THE INCIDENT

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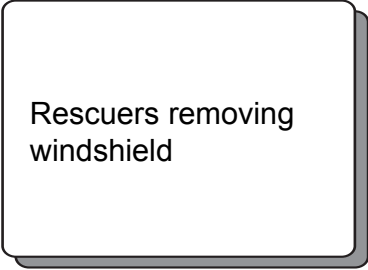

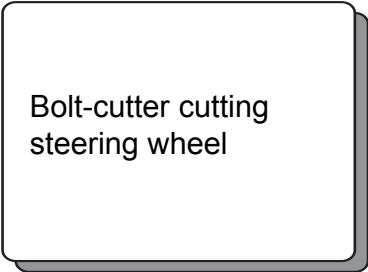
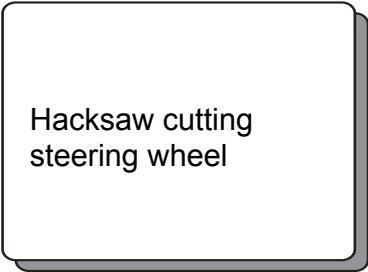

Slide Name	Slide Number and Description
 <p>Rescuers cutting windshield</p>	<b>SL 4-26</b>  Windshield safety glass has a plastic laminate between two layers of glass, which is why it is necessary to cut it with an axe.
 <p>Rescuers cutting windshield</p>	<b>SL 4-27</b>  Rescuers cutting windshield
 <p>Rescuers cutting windshield</p>	<b>SL 4-28</b>  Rescuers cutting windshield
 <p>Rescuers removing windshield</p>	<b>SL 4-29</b>  Rescuers removing windshield
 <p>Rescuers removing windshield</p>	<b>SL 4-30</b>  Rescuers removing windshield

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## SLIDE PROGRAMME GUIDE

### LESSON 4: THE INCIDENT

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Slide Name	Slide Number and Description
 <p>Rescuers removing windshield</p>	<b>SL 4-31</b>  Rescuers removing windshield
 <p>Rescuers removing windshield</p>	<b>SL 4-32</b>  Rescuers removing windshield
 <p>Bolt-cutter cutting steering wheel</p>	<b>SL 4-33</b>  If necessary, you can use a bolt-cutter to cut the steering wheel.
 <p>Hacksaw cutting steering wheel</p>	<b>SL 4-34</b>  You can also use a hacksaw to cut the steering wheel.
	



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## Medical First Responder Course

# Lesson Plan 5

## Anatomical References

**Suggested Duration:** 1 hour, 30 minutes

**Materials:**

- Overhead projector and projection screen
- Transparencies
- Spare bulb
- 5-metre extension cord
- Flipcharts
- Markers
- Chalkboard, chalk eraser and chalk
- Handouts
- Evaluation sheets
- Full-size skeletal model (if available)

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) Define anatomical position.
- 2) Identify and describe the three anatomical planes.
- 3) Identify the five regions of the human body.
- 4) List the five body cavities and the organs they contain.
- 5) Describe the location of a wound on a patient using anatomical references.
- 6) Name the four abdominal quadrants.
- 7) Identify the main internal organs located in each abdominal quadrant.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 5-1 TR 5-2</p>	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Presentation of the instructors and assistants.</li> <li>2. Presentation of the lesson.</li> <li>3. Presentation of the objectives of the lesson.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Anatomical Position</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Patient standing erect with arms down at the sides, palms facing forward. “Right” and “left” refers to the patient’s right and left.</p> </div> <p><b>2. Conventional References</b></p> <p>Communication among MFR’s and other medical personnel is easier and more precise when using common terminology</p> <p><b>2.1 Anatomical Planes</b></p> <p>The anatomical planes refer to imaginary planes that divide the body in two halves, in different orientations.</p> <ul style="list-style-type: none"> <li>• <b>Medial plane:</b> Imaginary plane that divides the body in two halves — Left half and right half.</li> <li>• <b>Transverse plane:</b> Imaginary plane that passes through the navel and divides to the body in two halves — the superior half and inferior half.</li> <li>• <b>Frontal plane:</b> Imaginary plane that divides the body in two halves — anterior half and posterior half.</li> </ul> <p><b>2.2 Extremities and Subdivisions</b></p> <p>The point of reference for extremities is usually the torso.</p> <ul style="list-style-type: none"> <li>• <b>Proximal:</b> Means close, or closer to the point of reference given.</li> <li>• <b>Distal:</b> Means distant, or farther away from the point of reference given. Used mainly for extremities. The reference may be a joint or the torso. Example: a wound on the forearm could be distal to the elbow or proximal to the wrist.</li> </ul>	
<p>TR 5-5</p>		





Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 5-6	<p><b>2.3 Positional Terms</b></p> <ul style="list-style-type: none"> <li>• <b>Prone:</b> Lying face down, on the stomach.</li> <li>• <b>Supine:</b> Lying face up, on the back.</li> <li>• <b>Lateral recumbent</b> or “<b>recovery</b>”: lying on one side of the body.</li> </ul> <p><i>&lt;Ensure participants complete WB with anatomical terms. Give examples of each.&gt;</i></p> <p><i>&lt;Identify fingers as thumb, second, third, fourth and fifth.&gt;</i></p> <p><i>&lt;Practice with the participants by pointing out different areas so that the participants learn to identify and locate.&gt;</i></p>	
NOTE		
TR 5-7	<p><b>3. Body Regions</b></p> <p><i>&lt;Use a participant to indicate body regions. Ask participants to label diagrams in WB.&gt;</i></p> <p>For the purposes of this course we recognise five regions:</p> <ul style="list-style-type: none"> <li>• <b>Head:</b> Skull, face, jaw (mandible)</li> </ul>	
TR 5-8	<ul style="list-style-type: none"> <li>• <b>Neck</b></li> </ul>	
TR 5-9	<ul style="list-style-type: none"> <li>• <b>Trunk:</b> Thorax, abdomen, pelvis</li> </ul>	
TR 5-10	<ul style="list-style-type: none"> <li>• <b>Upper extremities:</b> Shoulder joint (scapula, clavicle and humerus), arm, elbow, forearm, wrist, hand</li> <li>• <b>Lower extremities:</b> Hip joint (pelvis and femur), thigh, knee, leg, ankle, foot.</li> </ul>	
TR 5-11	<p><b>4. Body Cavities</b></p> <p>For purposes of this course we recognise five body cavities:</p> <p><i>&lt;Ask participants to label diagrams in WB.&gt;</i></p> <ul style="list-style-type: none"> <li>• <b>Cranial</b> – houses and protects the brain. Made of immovable joints.</li> </ul>	
TR 5-12	<ul style="list-style-type: none"> <li>• <b>Abdominal</b> – least protected cavity.</li> <li>• <b>Thoracic</b> – contains the heart, lungs and the great vessels. Separated from the abdomen by the diaphragm.</li> </ul>	
TR 5-13	<ul style="list-style-type: none"> <li>• <b>Pelvic</b> – contains the bladder and reproductive organs. Consists of the ilium, pubis and ischium. Iliac crests form the wings of the pelvis.</li> <li>• <b>Spinal</b> – houses and protects the spinal cord.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>TR 5-14</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<h2>5. Abdominal Quadrants and Organs</h2> <p>Since the abdomen has few reference points, it is divided into quadrants for locating internal organs, or describing the location of an injury or pain.</p> <p>A <b>vertical plane</b> and <b>horizontal plane</b> whose intersection point is the navel divide the abdomen into four <b>quadrants</b>.</p> <p><b>&lt;Ask participants to fill in blanks in WB.&gt;</b></p> <ul style="list-style-type: none"> <li>• The <b>right upper quadrant</b> contains the liver, colon, pancreas, and gallbladder.</li> <li>• The <b>left upper quadrant</b> contains the liver, spleen, stomach, colon, and pancreas.</li> <li>• The <b>right lower quadrant</b> contains the colon, small intestines, major artery and vein to the right leg, the ureter, and appendix.</li> <li>• The <b>left lower quadrant</b> contains the colon, small intestines, major artery and vein to the left leg, and the ureter.</li> </ul> <p>In the <b>midline area</b> are located the aorta, pancreas, small intestines, bladder, and spine.</p> <p><b>Hollow abdominal organs:</b> stomach, gallbladder, the large and small intestines, and the urinary bladder, and the uterus.</p> <p><b>Solid abdominal organs:</b> liver, spleen and pancreas.</p> <p><b>&lt;Discuss how the organs are affected by illness or injury.&gt;</b></p> <p>It is important to know the anatomy of the abdomen because damaged organs, such as the liver or spleen, can threaten the patient's life.</p> <p><b>Kidneys:</b> These solid organs are located in the <b>retroperitoneal cavity</b> (behind the peritoneum, or abdominal wall). They are <b>not</b> in the abdominal cavity.</p>	

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Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 5-17	<b>6.3 Urinary System</b>  The urinary system filters and excretes waste from the body. It consists of two kidneys and two ureters, one urinary bladder and one urethra. The ureters take urine from the kidneys to the next part of the system - the bladder. The bladder stores urine until it is passed through the urethra and is excreted from the body.	
TR 5-18	<b>6.4 Female Reproductive System</b>  The reproductive system of the female consists of two <b>ovaries</b> , two <b>Fallopian tubes</b> , the <b>uterus</b> , the <b>vagina</b> and <b>external genitals</b> . The female reproductive system provides the egg (ovum) which is fertilized by the male's sperm.	
TR 5-19	<b>6.4 Male Reproductive System</b>  The reproductive system of the male consists of two <b>testes</b> , a <b>seminal duct</b> , <b>accessory glands</b> , and the <b>penis</b> . The male reproductive system provides the sperm which fertilizes the female's ovum.	
TR 5-20	<b>6.5 Nervous System</b>  The nervous system is composed of the <b>brain</b> , the <b>spinal cord</b> and <b>nerves</b> . The nervous system has two major functions: communication and control. This system lets a person be aware of and react to the environment. It coordinates the body's responses to stimuli and keeps body systems working together.  The nervous system has three main parts: the <b>central nervous system</b> , the <b>peripheral nervous system</b> and the <b>autonomic nervous system</b> . The central nervous system consists of the <b>brain</b> and the <b>spinal cord</b> . The peripheral nervous system consists of the <b>nerves</b> . The autonomic nervous system <b>regulates functions</b> throughout the body.	
TR 5-21		



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 5-22	<p><b>6.6 Endocrine System</b></p> <p>The endocrine glands regulate the body by secreting hormones directly into the bloodstream. These glands affect physical strength, mental ability, stature, reproduction, hair growth, voice pitch, and behaviour. The secretions from these tiny glands can affect how people think, act and feel. Each gland produces one or more hormones. Some of the glands in the endocrine system are the <b>thyroid, parathyroids, adrenals, ovaries, testes, and the pituitary.</b></p> <p><b>6.7 Musculoskeletal System</b></p> <p>The musculoskeletal system is made up of the skeleton and muscles. This system helps to give the body shape and to protect internal organs. Muscles also provide for movement.</p> <p>The skeleton shapes the human body with its bony framework. The bone consists of living cells and non-living matter. The non-living matter contains calcium compounds that help make the bone hard and rigid. Without bones, the body would collapse. The skeleton is held together mainly by <b>ligaments, tendons</b> and layers of <b>muscle.</b></p> <p>The three kinds of joints are immovable like the skull, slightly movable like the spine, and freely movable like the elbow or the knee.</p> <p><b>Major areas of the skeleton</b></p> <p>The <b>skull</b> has several broad, flat bones that form a hollow shell. The top, including the forehead, back, and sides of this shell make up the <b>cranium.</b></p> <p>The <b>spinal column</b> houses and protects the <b>spinal cord.</b> The spinal column is the main supportive bony structure of the body and consists of 33 bones called <b>vertebrae.</b> The spine is divided into five major sections: the <b>cervical spine,</b> the <b>thoracic spine,</b> the <b>lumbar spine,</b> the <b>sacrum</b> and the <b>coccyx.</b></p> <p>The <b>thorax,</b> or rib cage, protects the heart and lungs – vital organs of the body. They are enclosed by 12 pairs of ribs and are attached at the back to the spine. The top 10 pairs are also attached in the front to the <b>sternum,</b> or breastbone. The lowest portion of the sternum is called the <b>xiphoid process.</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 5-23	<p>The <b>pelvis</b>, or hip bones, consists of the <b>ilium</b>, <b>pubis</b>, and <b>ischium</b>. Iliac crests from the “wings” of the pelvis. The pubis is the anterior portion of the pelvis. The ischium is the posterior portion.</p> <p>The <b>shoulder girdle</b> consists of the <b>clavicle</b> (collar bone) and the <b>scapulae</b> (shoulder blades).</p> <p>The <b>upper extremities</b> extend from the shoulders to the fingertips. The arm (shoulder to elbow) has one bone known as the <b>humerus</b>. The bones in the forearm (elbow to wrist) are the <b>radius</b> and the <b>ulna</b>.</p> <p>The <b>lower extremities</b> extend from the hips to the toes. The bone in the thigh, or upper leg, is known as the <b>femur</b>. The bones in the lower leg (knee to ankle) are the <b>tibia</b> and <b>fibula</b>. The kneecap is called the <b>patella</b>.</p> <p><b>Major types of muscles</b></p> <p><b>Skeletal muscle</b>, or <b>voluntary muscle</b>, makes possible all deliberate acts like walking and chewing.</p> <p><b>Smooth muscle</b>, or <b>involuntary muscle</b>, is made of longer fibres and is located in the walls of tubelike organs, ducts and blood vessels and forms much of the intestinal wall. A person has little or no control over this type of muscle.</p> <p><b>Cardiac muscle</b> makes up the walls of the heart. This muscle can stimulate itself into contraction, even when disconnected from the brain.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>6.8 The Skin</b></p> <p>The skin protects the body from the outside world. It also protects the deep tissues from injury, drying out, and invasion by bacteria and other foreign bodies. The skin also helps to regulate the body temperature, aids in getting rid of water and various salts, and helps to prevent dehydration. The skin also acts as the receptor organ for touch, pain, heat, and cold.</p> <p>The epidermis is the outermost layer of the skin and contains cells that give it colour. The dermis, or second layer, contains a vast network of blood vessels. The deepest layers of the skin contain hair follicles, sweat and oil glands, and sensory nerves. Just under the skin is a layer of subcutaneous fatty tissue.</p> <hr/> <p><b><i>III. REVIEW</i></b></p> <p>&lt;Review lesson objectives on page 1. See instructions below.&gt;</p> <p>&lt;Request a participant to demonstrate the terms: anterior, posterior, superior, inferior, right, and left, proximal, distal.&gt;</p> <p>&lt;Request a participant to point out in his or her own body the main body cavities and divisions of the abdomen, listing the organs located in each one.&gt;</p> <hr/> <p><b><i>IV. EVALUATION</i></b></p> <ol style="list-style-type: none"><li>1. Give the participants 10 minutes to complete the evaluation and then review the evaluation.</li><li>2. Verify that the objectives of the lesson have been met.</li></ol> <hr/> <p><b><i>V. CLOSE</i></b></p> <ol style="list-style-type: none"><li>1. Ask if there are any comments or suggestions.</li><li>2. Thank the participants and announce the next lesson.</li></ol>	

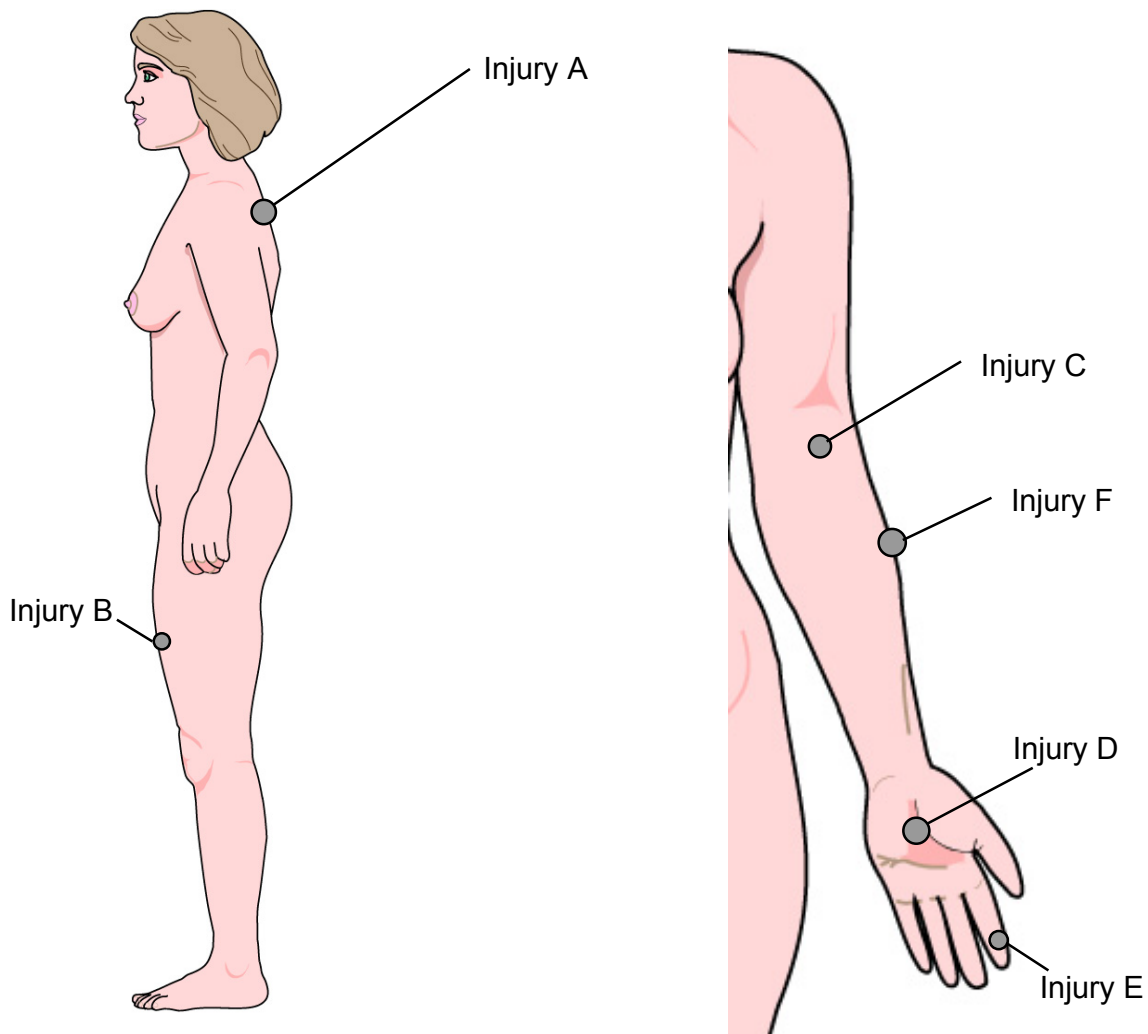


## Lesson 5 Post-Test The Human Body

1. Define the anatomical position.

*Patient standing erect with arms down at the sides, palms facing forward. "Right" and "left" refers to the patient's right and left.*

2. Describe the location of a wound on a patient using anatomical references. Identify the approximate location of the injuries indicated by the circles. (Respond on the following page).







## Lesson 5

### Post-Test (cont'd.)

**Injury A:** *Superior part of back, superior to the left scapula*

**Injury B:** *Anterior region of the left thigh*

**Injury C:** *Anterior region of the left forearm at the joint*

**Injury D:** *Anterior region of the left hand (left palm)*

**Injury E:** *Left second finger, anterior distal portion*

**Injury F:** *Anterior superior portion of the left forearm*

- 3) List the five regions of the human body on a skeletal model.
  - **Head:** *Skull, face, jaw (mandible)*
  - **Neck**
  - **Trunk:** *Thorax, abdomen, pelvis*
  - **Upper extremities:** *Shoulder joint (scapula, clavicle and humerus), arm, elbow, forearm, wrist, hand*
  - **Lower extremities:** *Hip joint (pelvis and femur), thigh, knee, leg, ankle, foot.*
- 4) List five cavities of the body and the organs they contain.
  - *Cranial – brain*
  - *Thoracic (separated from the abdomen by the diaphragm) – lungs, heart*
  - *Abdominal – stomach, liver, pancreas, gallbladder, large & small intestines, spleen*
  - *Pelvic – bladder, rectum, internal female organs*
  - *Spinal – spinal cord*

1

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## Lesson 5 Objectives

- 1) Define anatomical position.
- 2) Identify and describe the three anatomical planes.
- 3) Identify the five regions of the human body.

*more...*

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...cont'd.

## Lesson 5 Objectives

- 4) List the five body cavities and the organs they contain.
- 5) Describe the location of a wound on a patient using anatomical references.

*more...*

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...cont'd.

## Lesson 5 Objectives


- 6) Name the four abdominal quadrants.
- 7) Identify the main internal organs located in each abdominal quadrant.

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## Anatomical Position

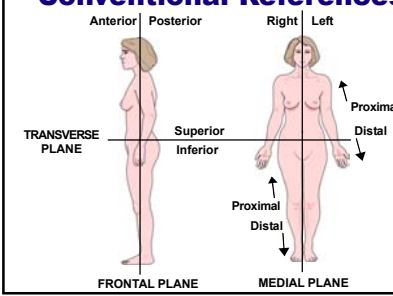


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## Conventional References



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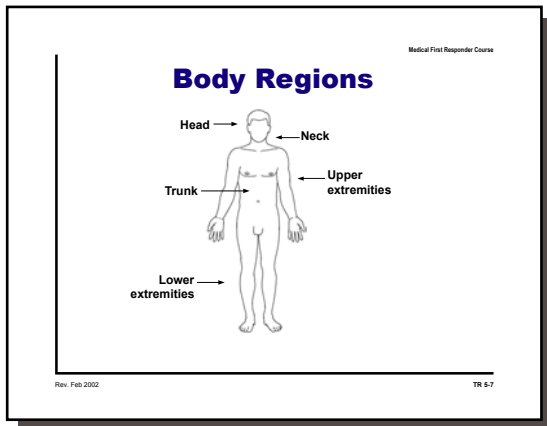
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## Positional Terms

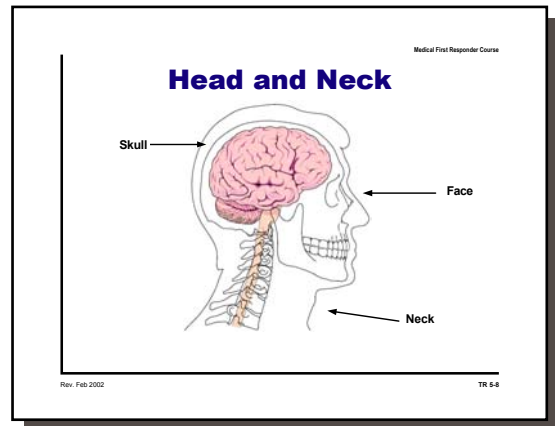
- **Prone:** Lying face down, on the stomach
- **Supine:** Lying face up, on the back

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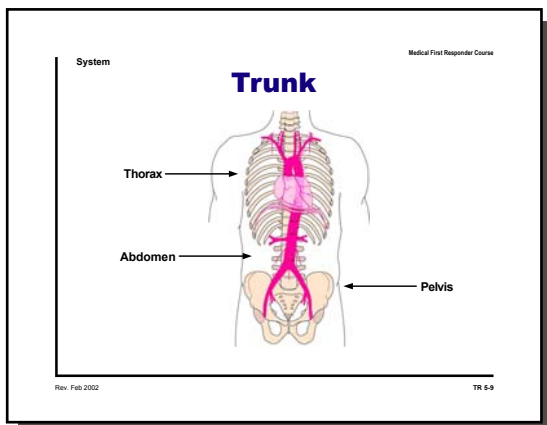
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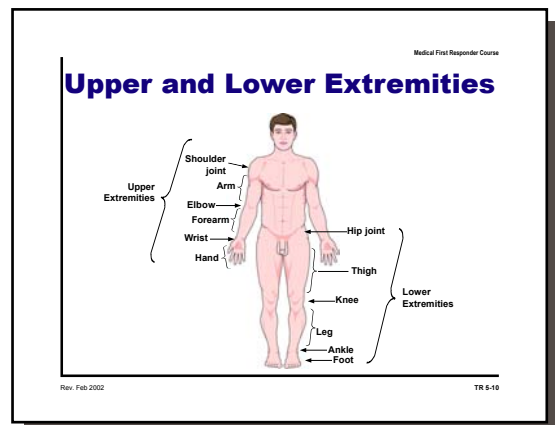
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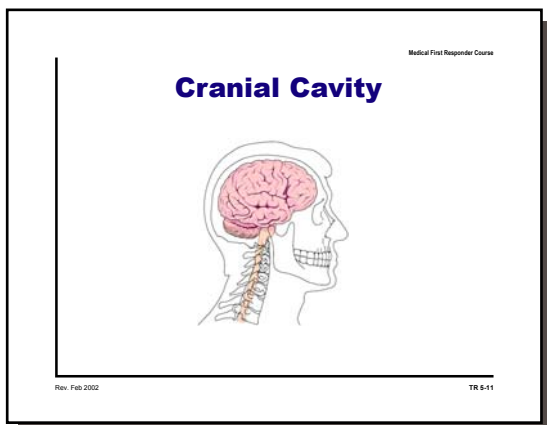
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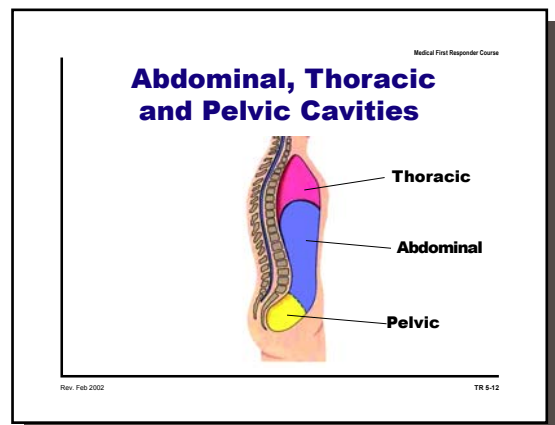
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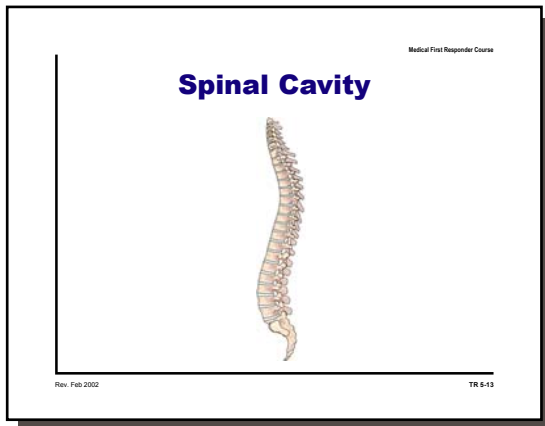
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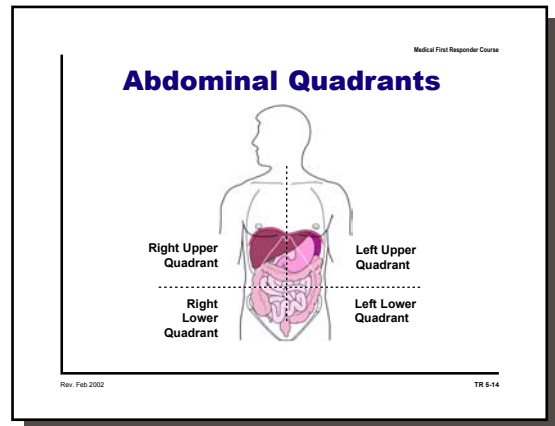
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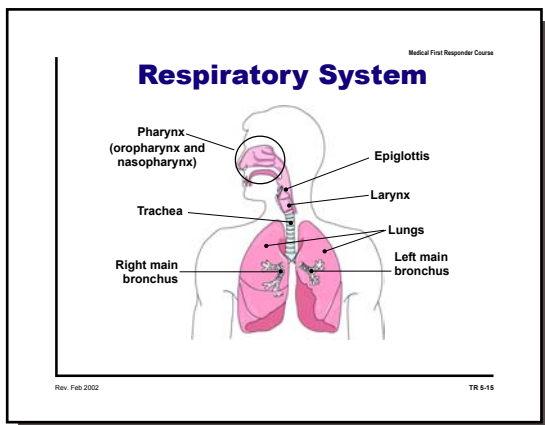
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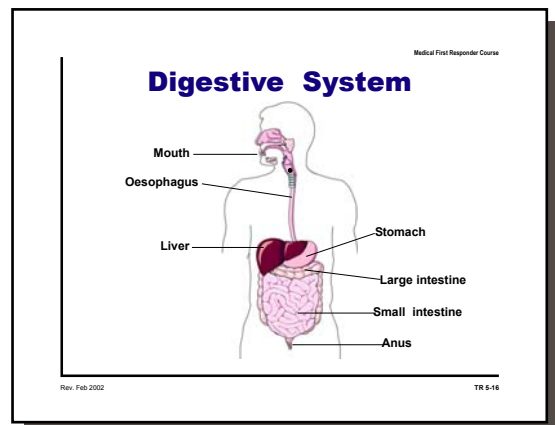
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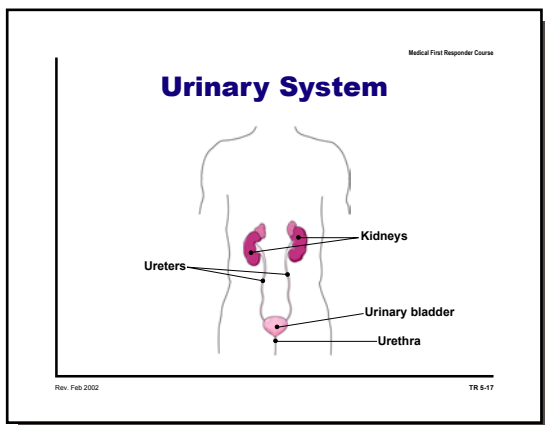
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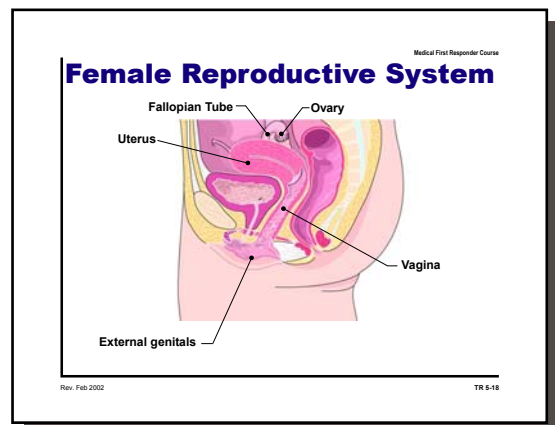
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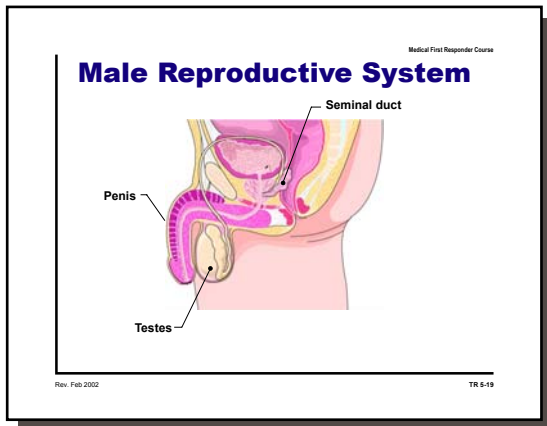
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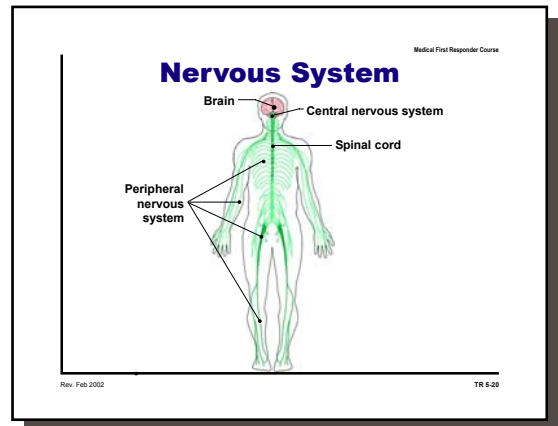
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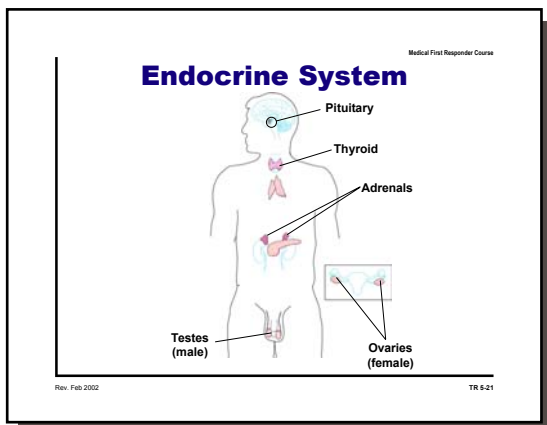
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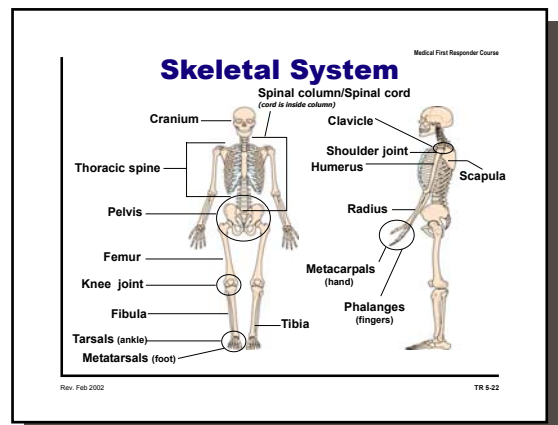
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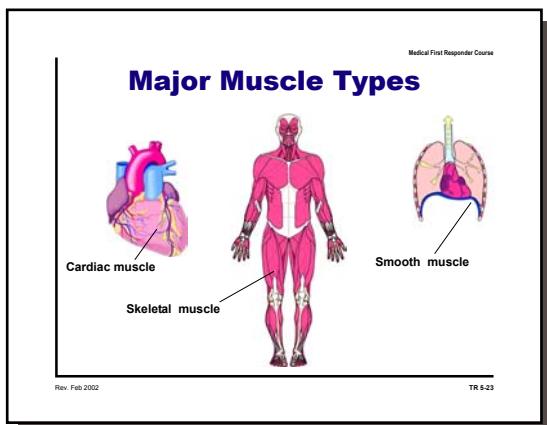
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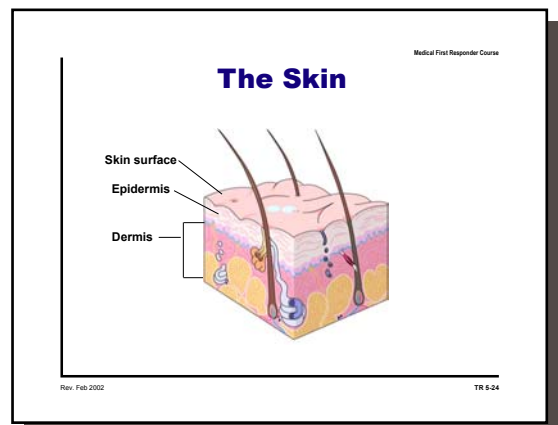
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## Medical First Responder Course

# Lesson Plan 6

## Patient Assessment

**Suggested Duration:** 5 hours

Materials:

- Review “Patient Assessment Plan” handout (HO-06.doc)
- Transparencies
- Flipcharts
- Overhead projector and screen
- Extension cord
- Spare projector bulbs
- Mannequin
- Small table
- 4 sphygmomanometers (blood pressure cuffs)
- 4 double stethoscopes (training type)
- Watch with second hand
- Notebooks
- Pencils
- Latex gloves

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) List the five general procedures a medical first responder should complete when arriving at the scene.
- 2) List the six phases of the patient assessment plan.
- 3) List the six steps of the initial assessment.
- 4) Demonstrate a complete physical examination as defined in this lesson.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 6-1 TR 6-2</p> <p>FC 6-1</p> <p>FC 6-2</p> <p>Refer to Lesson 4 if necessary</p> <p>TR 6-3</p> <p>TR 6-4</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce the instructor and assistant.</li> <li>2) Present the lesson.</li> <li>3) Present lesson objectives. Ask a participant to read from the workbook.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p>The sections of this lesson constitute the six phases of the <b>ASSESSMENT PLAN</b>. The Assessment Plan begins with information received on dispatch.</p> <p><b>1. Scene Size-Up</b></p> <p>Conduct a scene size-up as described in Lesson 4, then continue with the process described in the following paragraphs.</p> <p><b>&lt;Discourage the development of “tunnel vision.” Look around the surrounding area and be aware of escape routes.&gt;</b></p> <p>REMEMBER: The scene size-up ensures the safety of the people at the scene, identifies the mechanism of injury or the nature of the illness, and determines the need for additional resources. Most likely you will have no patient contact during scene size-up, but your observations, decisions and actions set the foundation for the entire call.</p> <p><b>1.1 Arrival on the Scene</b></p> <p>When arriving on the scene, as medical first responder you should:</p> <ol style="list-style-type: none"> <li>1) Ensure your own personal safety (includes the use of body surface isolation and securing scene).</li> <li>2) Ensure patient safety.</li> <li>3) Establish a general impression of the scene (determine mechanism of injury) and begin your initial assessment of the patient (if responsive, identify yourself).</li> <li>4) Identify and treat life-threatening injuries.</li> <li>5) Stabilise and continue to monitor the patient.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 6-5</p> <p>TR 6-6</p> <p>TR 6-7</p>	<p><b>1.2 Identify Yourself</b></p> <ol style="list-style-type: none"> <li>1) State your name and organisation.</li> <li>2) Identify yourself as a medical first responder.</li> <li>3) Ask the patient if you may help him/her (obtain consent).</li> </ol> <p><b>&lt;Have participants take notes in their WB.&gt;</b></p> <p><b>1.3 Immediate Sources of Information:</b></p> <ol style="list-style-type: none"> <li>1) The scene itself (observe, plan, react)</li> <li>2) Patient (if responsive)</li> <li>3) Relatives or bystanders</li> <li>4) The mechanism of injury (forces that caused the injury – kinematics).</li> <li>5) Any remarkable deformity or obvious injury</li> <li>6) Any signs or characteristics of certain types of injury or illness</li> </ol> <p><b>2. Initial Assessment</b></p> <p><b>&lt;Develop the concept that variations exist in conducting an Initial assessment based on the nature of the problem (Med-Trauma).&gt;</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> A process used to identify and treat conditions that pose an immediate threat to the patient's life.</p> </div> <p><b><i>Patient assessment is performed on every patient every time.</i></b></p> <p>The initial assessment should begin as soon as contact is made with the patient and you should initiate immediate life-saving procedures as required. The steps of the initial assessment (in order of importance) are discussed on the following pages.</p>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 6-3</b></p>	<p><b>Steps of the Initial Assessment</b></p> <ol style="list-style-type: none"> <li>1) <b>Form a general impression</b> as you approach the patient. If possible, obtain a chief complaint and a brief assessment of the immediate environment. (The general impression is not designed to be the final word on patient's condition, but gets you started on the right track). Determine if the situation is trauma or medical.</li> </ol> <p><b>Neck:</b> examine front and back (covered later in this lesson)</p> <p><b>Apply a cervical collar if needed.</b> You will learn how to select and apply a cervical collar in Lesson 12. For trauma cases with suspected cervical spine injury, before continuing, immediately immobilize the cervical region immediately to prevent paralysis.</p> <ol style="list-style-type: none"> <li>2) <b>Check for responsiveness.</b> <ul style="list-style-type: none"> <li>• Gently shake the patient's shoulders and shout, "Are you okay?" This is important for many reasons (for example, a patient with altered mental status may need airway care or other life-saving aid).</li> <li>• There are four levels of responsiveness commonly used to classify patients. They are: Alert, Verbal, Painful, Unresponsive (A.V.P.U.): <ul style="list-style-type: none"> <li><b>A = Alert:</b> A patient who is alert responsive and oriented (e.g. Aware of surroundings, approximate time and date, and his/her name. Commonly referred to as being responsive to person, place and date-oriented x3 – AA0x3).</li> <li><b>V = Verbal:</b> A patient who responds only when spoken to. We say he/she responsive to verbal stimulus.</li> <li><b>P = Painful:</b> The patient responds only to painful stimulus.</li> <li><b>U = Unresponsive:</b> The patient does not respond to any stimulus. Does not open eyes, respond verbally or even flinch when pain is applied. A deeply unconscious person is unquestionably in need of airway and other supportive care.</li> </ul> </li> </ul> </li> </ol> <p><b>NOTE</b> <i>&lt;Determining level of consciousness in infants or the elderly is difficult. Use their immediate environment and/or family to make a determination.&gt;</i></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p>3) <b>Ensure adequate airway</b> – how you do this depends on patient responsiveness.</p> <p><b>Responsive Patient:</b> Determine if the patient can speak clearly. Gurgling or similar sounds may indicate airway obstruction.</p> <p><b>Unresponsive Patient:</b> Needs aggressive airway maintenance immediately – make sure airway is open and patient is breathing adequately.</p> <p>There are two methods commonly used to open the airway:</p> <ul style="list-style-type: none"> <li>• Head-tilt/chin-lift manoeuvre</li> <li>• Jaw thrust manoeuvre</li> </ul> <p>Both methods remove the tongue (most common obstruction) from the back of the throat, allowing air into lungs.</p> <p>4) <b>Verify breathing</b> – look, listen and feel for air exchange (3-5 seconds). Respirations must be adequate. Adequate breathing is characterized by three factors:</p> <ul style="list-style-type: none"> <li>• Full rise and fall of chest</li> <li>• Easy breathing</li> <li>• Normal respiratory rate</li> </ul> <p>Inadequate breathing is characterized by:</p> <ul style="list-style-type: none"> <li>• Insufficient rise and fall of chest</li> <li>• Increased respiratory effort</li> <li>• Cyanosis (bluish/gray discoloration of skin, lips or nailbeds)</li> <li>• Mental status changes</li> <li>• Inadequate respiratory rate (&lt;8 in adults, &lt;10 in children, &lt;20 in infants)</li> </ul> <p>If airway obstruction is present, or if respirations are inadequate or absent, you must take immediate action.</p> <p><b><i>Apply oxygen as needed.</i></b> Administering oxygen is critical in preventing shock and damage to vital organs. Select appropriate delivery system and appropriate accessories. Administering oxygen will be covered fully in Lesson 8.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; text-align: center;"> Oxygen is used for both medical and trauma patients. </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p>5) <b>Assess circulation.</b> Take 5-10 seconds to determine if the patient has an adequate pulse.</p> <p><b>Responsive patient:</b> In verbally responsive adults, check radial pulse. Check brachial pulse for an infant. Check rate and rhythm.</p> <p><b>Unresponsive patient:</b> Check pulse of an unresponsive adult at the carotid artery. In children, check carotid/femoral pulse, and in infants the brachial artery.</p> <p><b>Control serious external bleeding:</b> Identify and treat life-threats. Do not let minor wounds sidetrack you.</p> <p><b>&lt;Have participants take their partner's carotid pulse.&gt;</b></p> <p><b>If pulse is absent, begin CPR immediately.</b> <b>(CPR will be covered in the next lesson.)</b></p> <p>6) <b>Patient status update.</b> Inform responding EMS units of your findings.</p> <ul style="list-style-type: none"><li>• If more resources will be needed, request them.</li><li>• If patient has life threatening injuries or illness, let responding units know.</li><li>• If patient is stable with minor injuries, advise responding units.</li></ul> <div><p>The initial assessment should be completed and all life threats treated before you can proceed to the physical exam.</p></div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 6-8	<h3>3. Physical Exam</h3> <p>Background</p> <ul style="list-style-type: none"><li>• The initial assessment is designed to help you identify and treat life-threatening conditions.</li><li>• The physical exam is a thorough survey of the patient's entire body. It is meant to reveal any signs of illness or injury.</li><li>• The physical exam proceeds in a logical order, usually from head to toe, but may vary from patient to patient.</li></ul> <div><p>The main purpose of the physical exam is to reveal any injury or medical problem that could be a threat to patient survival if left untreated.</p></div> <h4>3.1 Principles of Patient Assessment</h4> <p>Patient assessment is a skill, and must be practised.</p> <p>The patient assessment process involves the use of your senses. Three methods are used during your patient assessment:</p> <ul style="list-style-type: none"><li>• <b>Inspection (looking):</b> A method of examination that involves looking for signs of injury or illness. Simply make an overall observation of your patient, then an observation of the body.</li><li>• <b>Auscultation (listening):</b> A method of examination that involves listening for signs of illness or injury. The most important listening you will do is for air entering and leaving the lungs to determine respiratory status.</li><li>• <b>Palpation (feeling):</b> A method of examination that involves feeling for signs of illness or injury. Palpating, or feeling with your fingertips is usually done last in the exam, because it may cause pain. Actual pressure applied depends on the area and type of problem you suspect.</li></ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 6-4	<p><b>&lt;Look, listen, and feel will be used in CPR lesson for airway&gt;</b></p> <p><b>3.2 Conducting an Exam</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"><b>Medical vs. Trauma Patients</b></p> <p>An examination of a trauma patient is different from an examination of a medical patient.</p> <p>Physical signs of an injury can be observed and palpated. Medical problems are felt by the patient. In order to provide emergency care, you must ask questions to encourage the patient to describe their symptoms.</p> </div> <p>When conducting an exam, look for the following signs of injury. You may use the mnemonic “<b>D.O.T.S</b>” to remember them:</p> <ul style="list-style-type: none"> <li><b>D</b> = Deformities</li> <li><b>O</b> = Open injuries</li> <li><b>T</b> = Tenderness</li> <li><b>S</b> = Swelling</li> </ul> <p>Some signs may be obvious; others, such as abdominal tenderness caused by internal injuries, are not as obvious, and potentially serious.</p> <p><i>As you proceed, listen to your patient. Listening shows you care and will usually enable you to gather important information.</i></p> <p><b>3.3 Physical Exam (Head-to-Toe)</b></p> <p><b>&lt;Explain the sequence used when conducting the physical exam or head-to-toe exam. Also explain that this will be practised in the Practical Station.&gt;</b></p> <p>Observe and palpate (with both hands and equal pressure), compare (symmetry), smell and listen (unusual scent and sounds) in the following order:</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>NOTE</p> <p>NOTE</p>	<p><b>1) Examination of the Head</b></p> <ul style="list-style-type: none"> <li>Scalp and skull: Check for deformities, open injuries, tenderness and swelling.</li> <li>Ears and nose: Look for blood or cerebrospinal fluid (CSF) in or around openings</li> <li>Pupils: Normally constrict with more light and dilate with less light; usually symmetrical (unless otherwise due to prior condition or injury - consider possible artificial eye). Abnormal findings include no reactivity to light, pupils that remain constricted, or unequal pupils.</li> <li>Mouth: Check for deformities, open injuries, tenderness and swelling. Check for possible airway obstructions such as foreign objects, loose teeth, etc.</li> </ul> <p><b>2) Examination of the Neck</b></p> <p><b>&lt;Discuss large blood vessel &amp; major airway structures.&gt;</b></p> <ul style="list-style-type: none"> <li>Always go front to back (anterior to posterior).</li> <li>Check for deformities, open injuries, tenderness and swelling.</li> <li>Check trachea for mid-line position.</li> <li>Palpate vertebrae.</li> <li>Open injuries (bandage immediately with occlusive dressing (prevent air from entering veins).</li> <li>Check for medic alert necklace.</li> </ul> <p><b>&lt;Refer to Section 3 (Urgent Trauma Care), examination and immobilisation of the cervical spine. In this case examine the neck first.&gt;</b></p> <p><b>3) Examination of the Chest</b></p> <p>Any injury may involve the vital organs or major blood vessels.</p> <ul style="list-style-type: none"> <li>If trained to use the stethoscope, assess lungs for equal breath sounds.</li> <li>Check for deformities, open injuries, tenderness and swelling.</li> <li>Feel ribs for deformities all the way to spine.</li> <li>Palpate the sternum.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 6-5	<p><b>4) Examination of the Abdomen</b></p> <p>Abdominal organs may be injured without external signs.</p> <ul style="list-style-type: none"> <li>• Check for rigidity (hardness) or distention.</li> <li>• Cuts, scrapes (lacerations and abrasions), penetrating wounds, protruding organs. Potential bleeding and infection.</li> <li>• May indicate underlying injury. Palpate quadrant with pain last.</li> <li>• Swelling or discoloration.</li> </ul> <p><b>5) Examination of the Back</b></p> <ul style="list-style-type: none"> <li>• Check chest wall for deformities that may indicate broken ribs.</li> <li>• Check for obvious deformities and/or tenderness along entire length of spine that may indicate spinal cord injury.</li> <li>• As with chest injuries, check for sucking wounds, penetrating injuries, cuts, etc.</li> <li>• Blood accumulation in the flanks and/or tenderness may indicate abdominal injury.</li> </ul> <p><b>6) Examination of the Pelvis</b></p> <ul style="list-style-type: none"> <li>• Composed of the left and right ileum, ischium and pubic bone.</li> <li>• Pelvic or hip fracture could result in blood loss of 2 litres or more.</li> <li>• Internal organs, blood vessels and nerves pass through pelvic area.</li> <li>• Spinal injury possible.</li> <li>• Genital region: priapism in males.</li> <li>• Deformities not always obvious. Palpate iliac crest (pelvic wings) and pubic bones.</li> <li>• Open injuries may occur, but are uncommon. Penetrating injuries possible.</li> <li>• Assess for tenderness.</li> </ul> <p><b>7) Examination of the Lower Extremities</b></p> <p>Common sites of injury – do not rush your examination.</p> <ul style="list-style-type: none"> <li>• Check for deformities, open injuries, tenderness and swelling.</li> <li>• Check dorsalis pedis pulse or posterior tibial pulse</li> <li>• Check for motion – wiggle toes</li> <li>• Check for sensation – gently squeeze one extremity then another. Ask patient, “Can you feel this?”</li> </ul> <p><b>&lt;Discuss when to remove patient's shoes.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>8) Examination of the Upper Extremities</b></p> <p>Common sites of injury – do not rush your examination.</p> <ul style="list-style-type: none"> <li>• Check for deformities, open injuries, tenderness and swelling.</li> <li>• Check radial pulse</li> <li>• Check for motion – wiggle fingers</li> <li>• Check for sensation – gently squeeze one extremity then another. Ask patient, “Can you feel this?”</li> <li>• Check for medic-alert bracelet.</li> </ul> <p><b>3.4 Measuring Vital Signs</b></p> <p>A patient’s vital signs include:</p> <ul style="list-style-type: none"> <li>• Respiration</li> <li>• Pulse</li> <li>• Skin</li> <li>• Pupils</li> <li>• Blood pressure</li> </ul> <p>At the conclusion of the lesson, we will practice measuring vital signs. You can assess and monitor most vital signs by looking, listening and feeling.</p> <p><b>Proper Equipment to Measure Vital Signs</b></p> <ul style="list-style-type: none"> <li>• Wristwatch – count seconds</li> <li>• Penlight – examine pupils</li> <li>• Stethoscope – respiration and blood pressure</li> <li>• Pen and notebook – take notes</li> <li>• Blood pressure cuff (sphygmomanometer) – measure B/P</li> </ul> <p>More important than just measuring vital signs is <b>measuring changes over time</b>. It is important to establish baseline vital signs. For example, if pulse on initial reading is 80 and later becomes 120, this indicates the possibility of a serious condition developing.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b><u>Age Definitions</u></b></p> <p>Infant: Under 1 year</p> <p>Child: One to 8 years</p> <p>Adult: 9 and older</p> </div>	





Visual Aids and Other Materials	CONTENT	Time Elapsed																
	<p><b><u>Respiration</u></b></p> <div><p><b>Normal Respiratory Rates</b></p><table><tr><th><u>Age Group</u></th><th><u>Respirations</u></th></tr><tr><td>Infant</td><td>25-50 rpm</td></tr><tr><td>Child</td><td>15-30 rpm</td></tr><tr><td>Adult</td><td>12-20 rpm</td></tr></table></div> <p>A respiration consists of one inhalation and one exhalation.</p> <p>To count respirations, count the number of times a chest or abdomen rises and falls in 30 seconds, then multiply by 2. Pretend to count pulse or do something so the patient is unaware and breathing naturally.</p> <p>When respirations are all the same frequency and depth (shallow or deep breathing), breathing is considered regular. If frequency or rate is different, breathing is irregular (rhythm).</p> <p>Unusual noises (snoring or wheezing) can indicate an obstructed airway.</p> <p><b>Abnormal breathing conditions:</b></p> <ul style="list-style-type: none"><li>• Poor rise and fall of the chest</li><li>• Increased effort</li><li>• Cyanosis</li></ul> <p><b><u>Pulse</u></b></p> <p>The pulse is the pressure wave generated by the heartbeat. It directly reflects the rate, rhythm, and strength of contractions of the heart. Each time the heart beats, arteries expand and contract. You can feel the pulse by pressing on an artery over a bony prominence.</p> <div><p><b>Normal Pulse Rates</b></p><table><tr><th><u>Age Group</u></th><th><u>Pulse</u></th></tr><tr><td>Infant</td><td>120-150</td></tr><tr><td>Child</td><td>80-150</td></tr><tr><td>Adult</td><td>60-80</td></tr></table></div> <p>When measuring pulse, note the following:</p> <ul style="list-style-type: none"><li>• <b>Pulse Rate:</b> Slow or fast</li><li>• <b>Strength of pulse</b><ul style="list-style-type: none"><li>– Normal (full and strong)</li><li>– Thready (weak and rapid)</li><li>– Bounding (unusually strong)</li></ul></li><li>• <b>Rhythm:</b> Are beats spaced regularly?</li></ul> <p>Rate, strength and regularity tell you what the heart is doing at any given time.</p>	<u>Age Group</u>	<u>Respirations</u>	Infant	25-50 rpm	Child	15-30 rpm	Adult	12-20 rpm	<u>Age Group</u>	<u>Pulse</u>	Infant	120-150	Child	80-150	Adult	60-80	
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Child	80-150																	
Adult	60-80																	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>&lt;Radial Pulse: Demonstrate how to take a radial pulse. Let the classmates practice on each other.&gt;</b></p> <p><b>&lt;Avoid using your thumb — it has a pulse of its own.&gt;</b></p> <p>Other noted locations to measure a pulse:</p> <ul style="list-style-type: none"> <li>• Brachial – upper arm</li> <li>• Carotid – neck</li> <li>• Femoral – groin</li> <li>• Dorsalis pedis – top of the foot</li> <li>• Posterior tibial artery – medial surface of ankle</li> </ul> <p><b><u>Skin</u></b></p> <p>Assessment of the temperature, colour and condition can tell you about the patient's circulatory system.</p> <p><b><u>Temperature</u></b></p> <p>Normal body temperature: <b>98.6 °F or 37°C</b></p> <p>Method: Place the back of the hand against the patient's skin. This type of reading is called <b>relative skin temperature</b>. It is not an exact measurement, but can tell you if it is high or low.</p> <p>Temperature is reported as normal, hot, cool, or cold.</p> <p><b><u>Skin Colour</u></b></p> <p>Skin colour provides information on the heart, lungs and other problems (circulation).</p> <p>Skin colour can be characterized by:</p> <ul style="list-style-type: none"> <li>• <b>Paleness</b> (white ashen): Caused by shock or heart attack, resulting in impaired blood flow. Also caused by fright, fainting or emotional stress.</li> <li>• <b>Redness</b> (flushing): Caused by high blood pressure, alcohol abuse, sunburn, heat stroke, fevers, infection or disease.</li> <li>• <b>Blueness</b> (cyanosis): A serious problem, seen first around fingertips and mouth, caused by reduced levels of oxygen due to shock, MI, poisoning, etc.</li> <li>• <b>Yellowness</b>: Indicates liver disease. Includes sclera (eyes).</li> <li>• <b>Black and blue mottling</b>: Caused by blood seeping under the skin (a blow or severe infection)</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>&lt;In people with darker pigmentation, check for colour changes on lips, nailbeds, palms, ear lobes, inner surface of the lower eyelids, gums and tongue.&gt;</b></p> <p><b><u>Skin Condition</u></b></p> <p>Reported as dry, moist or wet with respect to the immediate environment.</p> <p><b><u>Capillary Refill</u></b></p> <p>Used for infants and children under 6 years old. Not always accurate in adults. Press on nailbed and observe how long it takes for the normal pink colour to return after releasing. Always re-check at the same place. Capillary refill may be delayed in patients with cold extremities. This method is used on adults in triage situations.</p> <p><b><u>Pupils</u></b></p> <p><b>Normal response:</b> Pupils constrict with exposure to light and dilate when amount of light is reduced. Both pupils should be the same size unless a prior injury or condition has changed this. To assess, shine a penlight to the eyes. If outdoors, cover the eyes and assess for dilation.</p> <p><b>Abnormal findings:</b> No reaction to light, pupils remain constricted (possible drug overdose), or unequal pupils (head injury or stroke).</p> <p><b><u>Blood Pressure</u></b></p> <p>This is the amount of pressure the surging blood exerts against the artery walls. It tells you if cells, organs and tissues are getting the blood necessary. A blood pressure cuff (sphygmomanometer) is used to measure blood pressure.</p> <p><b>Systolic pressure</b> is the result of a contraction of the heart, forcing blood through the arteries. <b>Diastolic pressure</b> is the relaxation between contractions. Both normally rise and fall together.</p> <p>Blood pressure varies with age, gender and medical history of the patient. It is usually 10 mm/Hg lower in females than in males.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed									
NOTE	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><b><u>Normal Blood Pressure Values (mmHg)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th><th style="text-align: center;"><u>Adult</u></th><th style="text-align: center;"><u>Child (up to 12 years old)</u></th></tr> </thead> <tbody> <tr> <td><b>Systolic:</b></td><td>100+age, up to 150 mmHg</td><td>80+(2 x age)</td></tr> <tr> <td><b>Diastolic:</b></td><td>65-90 mmHg</td><td>50-80 mmHg</td></tr> </tbody> </table> </div> <p><b>Methods</b></p> <ol style="list-style-type: none"> <li>1. Listening for systolic and diastolic sound (auscultation) using a blood pressure cuff &amp; stethoscope.</li> <li>2. Feeling for (palpating) the return of a pulse as cuff is deflated. Used when is too noisy or bumpy to auscultate. Can only measure systolic blood pressure.</li> </ol> <p><b>&lt;Remind participants that this will be practised in stations.&gt;</b></p> <p>Several factors can influence blood pressure. Some increase blood pressure while others will decrease it, such as:</p> <ul style="list-style-type: none"> <li>• Conditions or substances that constrict blood vessels can increase blood pressure such as:</li> <li>• Cold environment, stress, pain, smoking, caffeine, and decongestants.</li> <li>• Heart failure, trauma and/or shock will decrease blood pressure.</li> </ul> <p>Other factors can affect a reading, such as not hearing accurately, placing stethoscope improperly, not placing arm at heart level, using the wrong size cuff, or deflating the cuff too fast.</p>		<u>Adult</u>	<u>Child (up to 12 years old)</u>	<b>Systolic:</b>	100+age, up to 150 mmHg	80+(2 x age)	<b>Diastolic:</b>	65-90 mmHg	50-80 mmHg	
	<u>Adult</u>	<u>Child (up to 12 years old)</u>									
<b>Systolic:</b>	100+age, up to 150 mmHg	80+(2 x age)									
<b>Diastolic:</b>	65-90 mmHg	50-80 mmHg									



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 6-6</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<h2>4. Patient History</h2> <p>At this point, re-evaluate what you observed when you arrived on scene.</p> <ul style="list-style-type: none"> <li>• Secure scene for rescuer and patient, remove obvious mechanism of injury.</li> <li>• Patient history is gathered mostly in the interview.</li> <li>• Generally you ask the patient questions; however, if unresponsive, gather facts by observing scene M.O.I., looking for identification tags, speaking to family members and bystanders.</li> </ul> <p>Remember the differences between medical and trauma patients. In trauma, perform physical exam first. For medical patient take a history first.</p> <p><b>&lt;Discuss optional use of mnemonic “S.A.M.P.L.E.”&gt;</b></p> <p><b>(S) Signs and Symptoms.</b> <i>Signs:</i> conditions you can observe (see, feel or hear) such as a broken wrist or unequal pupils. <i>Symptoms:</i> conditions that only the patient can feel or describe, such as stomach pain, tenderness or dizziness.</p> <p>Begin by asking open-ended questions:</p> <ul style="list-style-type: none"> <li>– How do you feel?</li> <li>– Why did you call us today?</li> </ul> <p>Avoid closed-ended question that have “yes” or “no” answers, or leading questions. Examples:</p> <ul style="list-style-type: none"> <li>• Do you feel pain in your leg?</li> <li>• What do you feel in your chest?</li> </ul> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Do not diagnose. Treatment is based on assessment findings.</b></p> </div> <p><b>(A) Allergies.</b> Determine if patient is allergic to medications, food or anything in the environment. Can help to determine possible causes of patient’s condition.</p> <p><b>(M) Medication.</b> Identify all medications the patient is currently taking or has recently taken. These may identify a medical condition.</p> <p><b>(P) Pertinent history.</b> Pertinent to the emergency care you are providing.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>FC 6-7</b></p>	<p><b>(L) Last oral intake.</b> Ask your patient when the last time was he or she had anything to eat or drink. Pertinent to a patient who is unresponsive or confused. Important if the patient needs immediate surgery.</p> <p><b>(E) Events.</b> Activities prior to the incident.</p> <p><b>&lt;Give an example, ref. pg. 190, Brady First Responder.&gt;</b></p> <p><b>5. Ongoing Assessment</b></p> <p>A patient may be in stable or unstable condition. The assessment process must be ongoing until your patient is turned over to the next level of care. Complete the following every 5 minutes for unstable patients and every 15 minutes for stable patients.</p> <ol style="list-style-type: none"> <li>1. Reassess LOC (alert, verbal, painful, unresponsive).</li> <li>2. Reassess and correct any airway problems.</li> <li>3. Reassess breathing for rate &amp; quality. Ventilate as needed.</li> <li>4. Reassess pulse rate and quality.</li> <li>5. Reassess skin temperature, colour and condition.</li> <li>6. Repeat any part of physical exam that may be needed.</li> <li>7. Reassess your interventions (treatment) to check effectiveness.</li> <li>8. Continue to calm &amp; reassure the patient.</li> </ol> <p>Maintain professionalism and respect for patient's concerns and modesty. Do not leave patient unattended.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 6-8</b></p> <p><b>FC 6-9</b></p>	<h2>6.0 Hand-Off Report</h2> <p><b>&lt; The hand-off report can be verbal or written&gt;</b></p> <p>When you are relieved of your patient by a higher-level care provider. Be prepared to give appropriate information about your patient. This is the <b>hand-off</b> report, also known as <b>patient transfer information</b>.</p> <p>The hand-off report contains eight items of information:</p> <ul style="list-style-type: none"> <li>• Patient age and sex</li> <li>• Chief complaint</li> <li>• Level of consciousness</li> <li>• Airway status</li> <li>• Breathing status</li> <li>• Circulation status</li> <li>• Patient history</li> <li>• Treatment given</li> </ul> <p>The report is designed to be an up-to-the-minute account of the patient's condition, treatment and other information. Sometimes this will also appear in your written report.</p> <hr/> <h3><b>III. REVIEW</b></h3> <p><b>&lt;Review objectives on page 1 and ensure all participants have understood them clearly.&gt;</b></p> <hr/> <h3><b>IV. PRACTICAL EXERCISES</b></h3> <p>Rotate participants through the various stations according to the lesson plan.</p> <hr/> <h3><b>V. POST TEST</b></h3> <ol style="list-style-type: none"> <li>1. Respond to the post test.</li> <li>2. Verify completion of objectives.</li> </ol> <hr/> <h3><b>VI. CLOSING</b></h3> <ol style="list-style-type: none"> <li>1. Comments, suggestions.</li> <li>2. Thank the participants and announce the next lesson.</li> </ol>	



# Practical Exercises

## Patient Assessment

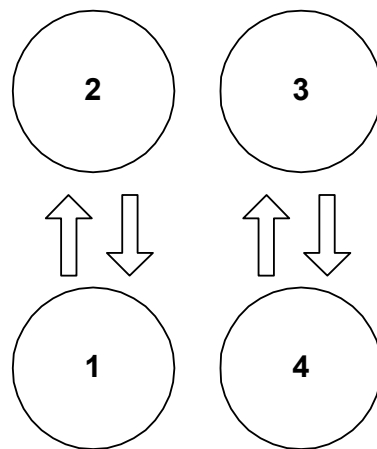
**Stations 1 and 4:** Initial assessment, trauma critical care, interviewing and head-to-toe examination

**Stations 2 and 3:** Measuring vital signs

**Rotation type for this lesson:**

**Number of rotations:** 2

**Duration:** 3 hours (90 minutes per station)



Participants will practice in and take turns playing the role of the patient and rescuer.

**<NOTE: After a brief explanation of the mechanics of this station, let participants begin practising. Do not spend time explaining material that was already covered during lecture. An instructor will be in charge of each station and responsible for filling out the evaluation.>**





## **Practical Exercises Patient Assessment (cont'd.)**

**Stations 1 and 4: Initial assessment, trauma critical care, interview and head-to-toe examination**

**Materials:**

- Latex gloves for each participant
- 3 sets of protective goggles
- 3 pocket flashlights
- 3 notebooks
- 3 pencils
- Skills Checklist form

Use the procedures described in the Skills Checklist and flipchart for this practical exercise. The participant is required to say out loud what he or she is doing and stating possible findings, while demonstrating the procedures outlined on the flipchart:

1. Arrival on the scene (secure or not secure)
2. Ensure personal safety (checks for all personal protective equipment).
3. Identify yourself (to the victim, the family or bystanders)
4. Perform all steps for the initial assessment.

***<Tell the participants at this time whether the case is trauma or medical.>***

***<Treatment of the problems identified in this exercise will be practised in subsequent exercises. DO NOT establish assumed injuries or pain – what is required of the participant in this exercise is to perform all steps of the initial assessment, not to provide treatment.>***

5. Perform steps for physical exam.
6. Obtain patient history.

***<Remind participants that the information for the physical exam and patient history is obtained in different ways for conscious and unconscious patients .>***



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## Lesson 6

### Skills Checklist

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### Patient Assessment

### Station 1 or 4

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Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** In this station, the participant will say out loud what he or she is doing, stating possible findings, while demonstrating each of the following procedures. Check the box showing on which attempt the participant was able to perform the step successfully. Mark UTP with an X to indicate the participant was unable to perform successfully within four attempts.

Performance Objectives	Successful on Attempt				UTP
	1	2	3	4	
1. Scene size-up (secure or not secure).					
2. Ensure personal safety and proper use of PPE.					
3. Identify yourself (to the victim, the family or bystanders)					
4. Perform all steps for the initial assessment.					
5. Perform all steps for physical exam.					
6. Obtain patient history.					

**Comments:** \_\_\_\_\_

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**Overall Performance:**   ☐ Outstanding   ☐ Successful   ☐ Needs Improvement

Instructor: \_\_\_\_\_



## **Practical Exercises Patient Assessment (cont'd.)**

### **Instructor Checklist Guide for Stations 1 and 4:**

1. Secure the scene
2. Ensure personal safety
3. Identify yourself to patient
4. Determine state of consciousness
5. Establish open airway
6. Determine respiration
7. Determine pulse (maintaining open airway)
8. Assess bleeding
9. Cervical collar / administer oxygen
10. Patient interview – obtain patient history
11. Determine next step
12. Scalp and skull
13. Face
14. Ears and nose
15. Pupils and eyelids
16. Mouth
17. Neck
18. Chest (look, listen, feel)
19. Abdomen
20. Pelvis
21. Genital region
22. Lower extremities
23. Upper extremities
24. Back



## **Practical Exercises**

### **Patient Assessment (cont'd.)**

#### **Stations 2 and 3: Taking Vital Signs**

##### **Materials per station:**

- Latex gloves for each participant
- 3 sphygmomanometers
- 3 stethoscopes
- 1 double stethoscope (for the instructor)
- Wristwatch
- 3 notebooks
- 3 pencils
- Skills Checklist form (each participant)

Use the procedures described in the Skills Checklist and flipchart for this practical exercise. The participant will practice and demonstrate the following procedures with the patient at rest (supine, seated and standing):

1. Explain to the patient that you will be taking vital signs
2. Check respirations
3. Check pulse (radial)
4. Check skin condition
5. Check pupils
6. Palpate blood pressure (systolic only)
7. Check blood pressure (use BP cuff and stethoscope)

Next, the participant in the role of the patient will need to do some type of exercise for one minute, such as jumping jacks, then have vital signs taken again. After completing these steps participant pairs should switch roles.

**<Remember to form new pairs of participants.>**



## Lesson 6

### SKILLS CHECKLIST

#### Measuring Vital Signs Station 2 or 3

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. Mark UTP with an X to indicate the participant was unable to perform successfully within four attempts.

Performance Objectives	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Explain to the patient that you will be measuring vital signs					
3. Check respirations					
4. Check pulse (radial)					
5. Check skin condition					
6. Check pupils					
7. Palpate blood pressure (systolic only)					
8. Check blood pressure (use BP cuff and stethoscope)					

Comments: \_\_\_\_\_

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**Overall Performance:** ☐ Outstanding ☐ Successful ☐ Needs Improvement

Instructor: \_\_\_\_\_



## **Lesson 6**

### **Post-Test**

### **Patient Assessment**

1. List the five general procedures taken by the rescuer when arriving at the scene.
  - 1) *Ensure your own personal safety (includes BSI and securing the scene).*
  - 2) *Ensure patient safety.*
  - 3) *Establish a general impression of the scene (determine mechanism of injury) and begin your initial assessment of the patient (if responsive, identify yourself.)*
  - 4) *Identify and treat life threats.*
  - 5) *Stabilize and continue evaluating the patient.*
2. List the six phases of the patient assessment plan.
  - *Scene assessment*
  - *Initial assessment*
  - *Physical examination*
  - *Patient history*
  - *Ongoing assessment*
  - *Patient hand-off (transfer)*
3. List the six steps of the initial assessment.
  - 1) *Form a general impression.*
  - 2) *Check for responsiveness.*
  - 3) *Ensure adequate airway.*
  - 4) *Verify breathing.*
  - 5) *Assess circulation.*
  - 6) *Control serious external bleeding.*

1

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Medical First Responder Course

## Assessment Plan

- Scene Size-Up
- Initial Assessment
- Physical Examination
- Patient History
- Ongoing Assessment
- Patient Hand-Off

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## Scene Size-up

- What is the current situation?  
*Medical or mechanism of injury?*  
*Observe for related hazards*
- Where is it going?  
*What are the possibilities?*
- How do I control it?  
*What resources are needed?*

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## Initial Assessment

- General impression
- Responsiveness
- Airway
- Breathing
- Circulation
- Patient status update

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## Physical Exam

Use D.O.T.S.

- Head
- Neck
- Chest / Back
- Abdomen
- Pelvis

*more ...*

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...cont'd.

## Physical Exam

- **Extremities**
- **Vital signs**
  - respiration
  - pulse
  - skin
  - pupils
  - blood pressure

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Medical First Responder Course

## Patient History

“S.A.M.P.L.E.”

- **S**igns and symptoms
- **A**llergies
- **M**edications
- **P**ast history
- **L**ast oral intake
- **E**vents

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## Ongoing Assessment

- **Repeat initial assessment**
- **Repeat physical exam**
- **Reassess treatment and interventions**
- **Calm and reassure the patient**

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## Patient Hand-Off

- **Patient age and sex**
- **Chief complaint**
- **Level of responsiveness**
- **Airway status**
- **Breathing status**

more ...

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...cont'd.

## Patient Hand-Off

- Circulation status
- Physical exam findings
- Sample history
- Treatment

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## Lesson 6 Station 1

### Patient Assessment

1. Scene size-up
2. Ensure personal safety
3. Identify yourself
4. Initial assessment
5. Physical exam
6. Patient history

RM p. 168-191  
Rev. Feb 2002 FC 6-10

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Medical First Responder Course

## Lesson 6 Station 2

### Taking Vital Signs

1. Inform patient of your intentions
2. Check respirations
3. Check pulse
4. Check skin condition
5. Check pupils
6. Check blood pressure

RM p. 182-188  
Rev. Feb 2002 FC 6-11

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Medical First Responder Course

## Lesson 6 Station 4

### Patient Assessment

1. Scene size-up
2. Ensure personal safety
3. Identify yourself
4. Initial assessment
5. Physical exam
6. Patient history

RM p. 168-191  
Rev. Feb 2002 FC 6-12

## **Lesson 6**

### **Station 3**

#### **Taking Vital Signs**

- 1. Inform patient of your intentions**
- 2. Check respirations**
- 3. Check pulse**
- 4. Check skin condition**
- 5. Check pupils**
- 6. Check blood pressure**

1

Medical First Responder Course

## Lesson 6 Objectives

- 1) List the five general procedures a medical first responder should complete when arriving at the scene.
- 2) List the six phases of the patient assessment plan.

*more ...*

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Medical First Responder Course

...cont'd.

## Lesson 6 Objectives

- 3) List the six steps of the initial assessment.
- 4) Demonstrate a complete physical examination as defined in this lesson.

*more ...*

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Medical First Responder Course

## Arrival on the Scene

1. Ensure your own personal safety.
2. Ensure patient safety.
3. Establish a general impression of the scene and begin initial assessment of the patient.

*more ...*

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Medical First Responder Course

...cont'd.

## Arrival on the Scene

4. Identify and treat life-threatening conditions.
5. Stabilise and continue to monitor the patient.

*more ...*

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Medical First Responder Course

## Immediate Sources of Information

- The scene itself (observe, plan, react)
- Patient (if responsive)
- Relatives or bystanders

*more ...*

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Medical First Responder Course

...cont'd.

## Immediate Sources of Information

- The mechanism of injury (forces that caused the injury; kinematics).
- Any remarkable deformity or obvious injury.
- Any sign or characteristics of certain types of injury or illness.

*more ...*

Rev. Feb.2002 TR6-6

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## Initial Assessment

A process used to identify and treat conditions posing an immediate threat to the patient's life.

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TR6-7

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Medical First Responder Course

## Physical Exam

The main purpose of the physical exam is to reveal any injury or medical problem that could pose a threat to patient survival if left untreated.

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TR6-8



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## **Medical First Responder Course**

# **Lesson Plan 7**

# **Basic Life Support (BLS) and Cardiopulmonary Resuscitation (CPR)**

**Suggested Duration:** 16 Hours

- Preparation:**
- Participants should read Brady First Responder, Fifth Edition, Chapters 6 and 7.
  - Check on legalities in the region of who has authority to pronounce a person officially dead.
  - Make sure all participants view the CPR video-tape from the American Heart Association.
  - Review Handout at the end of the Participant's Workbook

**Lesson Materials:**

- Videocassette recorder (VCR)
- AHA videotape

**Station Materials:**

- Latex gloves
- Actar CPR adult and infant mannequins
- CPR face shields
- Goggles
- Disinfectant
- Dressings
- One blanket per mannequin

### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

- 1) List two causes of partial or total upper airway obstruction.
- 2) Demonstrate rescue breathing for adults, children and infants using a mannequin, with and without foreign body airway obstruction.
- 3) Describe and demonstrate CPR in adults, children, and infants using a mannequin.
- 4) Describe and demonstrate two-rescuer CPR for adults.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 7-1 TR 7-2</p> <p>NOTE</p> <p>NOTE</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce the instructor and assistant.</li> <li>2) Present the lesson.</li> <li>3) Present lesson objectives. Ask a participant to read aloud from the workbook.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Chain of Survival</b></p> <p><b>&lt;These are survival and risk factors according to the American Heart Association.&gt;</b></p> <p>Cardiopulmonary resuscitation (CPR) can save the lives of victims in cardiac arrest. Two-thirds of heart attack victims (due to heart disease) die outside the hospital, most within two hours of the onset of symptoms. Though CPR itself is not enough to save the life of a victim of heart attack, it is a vital link in the chain of survival.</p> <p>The “Chain of Survival” has four links, and the patient’s chances for surviving are the greatest when all the links come together. The four links are as follows:</p> <ul style="list-style-type: none"> <li>• <b>Early access:</b> Recognise the signs and symptoms of cardiac and respiratory emergencies early and notify Emergency Medical Services.</li> <li>• <b>Early CPR:</b> Perform effective CPR. Starting CPR early greatly increases the patient’s chances for survival.</li> <li>• <b>Early defibrillation:</b> If trained on and equipped with an automated external defibrillator (AED), use it as soon as possible. This link is the most likely to improve survival rates.</li> <li>• <b>Early advanced care:</b> It is important that advanced medical care (ACLS) be available rapidly for a positive outcome.</li> </ul> <p>The need for these interventions should not be limited to victims of heart disease. Many victims of drowning, trauma, electrocution, suffocation, airway obstruction, allergic reaction, etc., may be saved by prompt intervention.</p> <p><b>&lt;Emphasise to the student the importance of knowing the local emergency phone number. Ask if there is a “universal emergency number” in their area.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<h2>2. Heart Attack Risk Factors</h2> <p><b>&lt;Explain risk factors and how they relate to cardiac disease.&gt;</b></p> <p>An association has been found to exist between specific conditions and behaviours, and the development of blood vessel disease. The “risk factors” concept was developed to create an awareness of these associations.</p> <ul style="list-style-type: none"> <li>• Factors that cannot be changed <ul style="list-style-type: none"> <li>– Family history</li> <li>– Sex</li> <li>– Ethnic background</li> <li>– Age</li> </ul> </li> <li>• Risk factors that can be changed <ul style="list-style-type: none"> <li>– Smoking</li> <li>– High blood pressure</li> <li>– High cholesterol</li> <li>– Physical activity</li> </ul> </li> <li>• Contributing factors <ul style="list-style-type: none"> <li>– Obesity</li> <li>– Diabetes</li> <li>– Excessive stress</li> </ul> </li> </ul> <p>The greater the prevalence of risk factors, the greater the likelihood of heart disease or other blood vessel disease.</p> <h2>3. Heart and Lung Function and Anatomy</h2> <h3>3.1 THE CARDIOVASCULAR SYSTEM</h3> <p>The cardiovascular system consists of the <b>heart</b>, <b>arteries</b>, <b>capillaries</b> and <b>veins</b>. The heart is a muscular organ, approximately the size of a fist, and is located in the thoracic cavity behind the sternum and between the lungs. The coronary arteries are special arteries that supply blood to the heart muscles themselves.</p> <p>The function of the heart is to <b>pump blood</b>. The <b>left side</b> receives oxygenated blood from the lungs and pumps it to the body through the arteries. The <b>right side</b> receives, from the veins, the blood that has circulated through the body and pumps it to the lungs to be oxygenated once again.</p> <p>A system of one-way valves keeps the blood flowing in the right direction and prevents it from flowing backwards.</p>	
TR 7-3		
TR 7- 4		



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 7- 5	<h3>3.2 The RESPIRATORY SYSTEM</h3> <p>The respiratory system is made up of four components:</p> <ul style="list-style-type: none"> <li>• an <b>airway</b> (upper and lower)</li> <li>• a <b>neuromuscular system</b> (includes the respiratory centre in the brain, respiratory muscles, and the nerves that connect the two)</li> <li>• <b>alveoli</b>—tiny airs sacs surrounded by capillaries</li> <li>• <b>arteries, capillaries and veins</b></li> </ul> <p>The alveoli are surrounded by the <b>capillaries</b>. The brain sends nerve signals to muscles in the thorax and diaphragm, causing us to breathe. With each inhalation, air is carried through the airways to the alveoli in the lungs, where oxygen and carbon dioxide are exchanged.</p> <p>In combination with the respiratory system, the circulatory system supplies the oxygen necessary for life, and eliminates carbon dioxide from the body.</p>	
TR 7-6		
TR 7-7		
FC 7-1	<h3>4. Breathing</h3> <p>To assess the presence of breathing, we look, listen and feel.</p> <p><b>Adequate breathing</b> is characterised by:</p> <ul style="list-style-type: none"> <li>• Chest and abdomen rise and fall with each breath.</li> <li>• Air can be heard and felt exiting the mouth or nose.</li> <li>• Ease of breathing (effortlessness)</li> <li>• Adequate rate</li> </ul>	
FC 7-2	<p><b>Inadequate breathing</b> is characterised by:</p> <ul style="list-style-type: none"> <li>• Inadequate rise and fall of the chest.</li> <li>• Noisy breathing: bubbles, rales, stridor, whistling, etc.</li> </ul>	
FC 7-3	<ul style="list-style-type: none"> <li>• Increased respiratory effort</li> <li>• Cyanosis</li> <li>• Inadequate rate</li> <li>• Altered mental status</li> </ul>	
FC 7-4	<p><b>Absent breathing</b> is characterised by:</p> <ul style="list-style-type: none"> <li>• No chest or abdominal movement.</li> <li>• Air cannot be heard and felt exiting the mouth or nose.</li> </ul>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 7-8</p> <p>TR 7-9</p>	<h2>5. Cyanosis</h2> <div> <p><b>Definition:</b> A bluish coloration of the skin and mucous membranes caused by a lack of oxygen in the blood and tissues.</p> </div> <p>This condition can be the result of the patient breathing in an environment poor in oxygen, suffering from illness or respiratory injury, or airway obstruction.</p> <p>Cyanosis can be more easily noticed on the lips, ears and nostrils or nailbeds. In patients with dark pigmentation, it is necessary to inspect the nostrils, palms and nailbeds, and the mouth and tongue.</p> <h2>6. Clinical and biological death</h2> <p>The respiratory and circulatory system are <b>interdependent</b> – if either one stops, the other will do the same in a very short time. The brain is the first organ to suffer the effects of a lack of oxygen. Shortly after oxygen supply is cut off, brain cells begin to die, causing irreversible damage.</p> <div> <p><b>Clinical Death:</b> Occurs when a patient is in respiratory arrest (not breathing) or in cardiac arrest (heart not beating). The patient has a period of 4 to 6 minutes to be resuscitated without brain damage. Clinical death <b>can</b> be reversed.</p> </div> <div> <p><b>Biological Death:</b> The moment the brain cells begin to die. Biological death <b>cannot</b> be reversed.</p> </div> <p><b>EXCEPTION:</b> Cold-water drownings. There have been cases of persons resuscitated one hour or more after cold-water drowning. In these cases, victims should receive prolonged resuscitative efforts. In a cold environment, a person should not be considered dead until the victim's body is warmed.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>7. Signs of Certain death</b></p> <ul style="list-style-type: none"> <li>• <b>Lividity:</b> The pooling of blood in the lower areas of the body. Shows as a purple to bluish colour. A few hours after death, blood will settle in the lowest areas of the body due to gravity.</li> <li>• <b>Rigor mortis:</b> stiffening of the body and limbs that occurs after death, usually within 4–10 hours.</li> <li>• <b>Decomposition:</b> A decomposing body always produces a fetid odour. The rate of decomposition depends on a number of factors, primarily ambient temperature.</li> <li>• <b>Other signs:</b> mortal wounds such as decapitation, dismemberment, incineration, severe crushing injuries, etc.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Only a medical doctor can pronounce a person officially dead.</b></p> </div> <p><b>8. Techniques for Opening the Airway</b></p> <p><b>8.1 Head-Tilt Chin-Lift</b></p> <p>This is the method of choice for opening the airway.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Do not use this method if you suspect head, neck or spinal injury.</b></p> </div> <p><b>&lt;Conduct demonstration.&gt;</b></p> <ol style="list-style-type: none"> <li>1) Position the patient <b>lying face up</b>.</li> <li>2) Kneel by the patient’s shoulders towards the head.</li> <li>3) Place one hand on the <b>forehead</b> and place the fingertips of your other hand under the <b>bony</b> part of the patient’s jaw.</li> <li>4) Lift up on the chin, supporting the jaw, and at the same time, tilt the head back as far as possible. <b>For infants and children:</b> Place in the “sniffing” position—do not overextend.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>NOTE</p> <p>NOTE</p>	<p><b>Important precautions:</b></p> <ul style="list-style-type: none"> <li>• Always keep the patient's mouth slightly open – use your thumb to hold down the patient's lower lip.</li> <li>• Never dig into the soft tissue under the patient's chin.</li> </ul> <p>Once the airway is open, check breathing. Look, listen and feel. If patient is not breathing, start artificial ventilations. If unable to ventilate, assume the airway is obstructed.</p> <p><b>8.2 Jaw Thrust</b></p> <p><b>The jaw thrust is the only manoeuvre recommended on an unconscious patient with suspected head, neck or spinal injury.</b></p> <p><b>&lt;Conduct demonstration.&gt;</b></p> <ol style="list-style-type: none"> <li>1) Position the patient lying face up.</li> <li>2) Kneel above the patient's head. Place your elbows next to the patient's head on the surface where the patient is lying. Place both hands on either side of the patient's head.</li> <li>3) Grasp the angle of the patient's jaw on both sides; for a infant or child use two to three fingers.</li> <li>4) Use a lifting motion to move the jaw forward (up) with both hands.</li> <li>5) Keep the patient's mouth slightly open by using your thumbs if needed.</li> </ol> <p><b>&lt;Emphasise the need to reattempt if airway does not open. Reposition and reassess. If unsuccessful, consider using airway adjunct.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>9. Artificial Ventilation (Rescue Breathing)</b></p> <p>Once the patient has an open airway, you can provide artificial ventilation for a patient breathing inadequately or not at all.</p> <p><i>How is it possible to maintain a patient alive with exhaled air?</i></p> <p>Natural air contains approximately 21% oxygen and the body only utilises about 5%. Therefore, exhaled air contains 16% oxygen. This exhaled air can resuscitate a person who is not breathing, until a high-concentration oxygen source is available.</p> <p>There are many techniques for artificial ventilation. You should be competent in three, listed below in recommended order of preference:</p> <ol style="list-style-type: none"><li>1. Mouth-to-<u>mask</u></li><li>2. Mouth-to-<u>barrier device</u></li><li>3. Mouth-to-<u>mouth</u></li></ol> <p><b>Breathing rates and duration:</b></p> <ul style="list-style-type: none"><li>• Adults: 10 to 12 breaths per minute lasting 1.5 to 2 seconds.</li><li>• Children and infants: 20 breaths per minute lasting 1 to 1.5 seconds.</li><li>• Newborns: 40 breaths per minute lasting 1 to 1.5 seconds.</li></ul> <p>Look for proper chest rise. With infants and newborns, use puffs from the mouth so as not to over-ventilate.</p> <p><b>Hazards to Rescuers</b></p> <ul style="list-style-type: none"><li>• Diseases: Blood-borne and/or airborne. Mask, gloves, and eye protection should be worn. Use BVM or pocket mask.</li><li>• Chemicals: Exposure from a contaminated patient. Patient should be decontaminated first.</li><li>• Vomitus: One-way valve on a pocket mask or BVM should be used.</li></ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Gastric Distention</b></p> <p>This problem can occur during rescue breathing, which can force some air into the patient's stomach, causing the stomach to become inflated, or distended. This can result in two serious problems:</p> <ul style="list-style-type: none"> <li>• Reduced lung volume—the lungs become upwardly displaced by the diaphragm.</li> <li>• Vomiting—Explosive expulsion of fluids or partially digested foods from the stomach into the throat, resulting in airway obstruction, aspiration of vomit into lungs, possible causing lung damage and/or a lethal form of pneumonia.</li> </ul> <p><b>Prevention:</b> Avoid or minimize gastric distention by positioning the patient's head properly and by avoiding giving ventilations that are <b><u>too forceful</u></b> or <b><u>too quick</u></b>. Volume should be limited to that which causes the chest to <b><u>rise adequately</u></b>.</p> <p>When gastric distention presents, be prepared for vomiting. If the patient does vomit, roll the patient (entire body) onto his or her side, manually stabilising the head and neck. Be prepared to clear the patient's mouth and throat with gauze and gloved fingers. Apply suction per local protocol. Place the position in the recovery position, as discussed next.</p> <p><b>Recovery Position:</b> For a patient with a pulse and adequate breathing, place the patient in the recovery position. This position uses gravity to keep the airway clear, allowing fluids to drain out of the mouth instead of into the airway. The recovery position should be used on an unresponsive, uninjured patient who is breathing adequately. Keep the patient in that position until transportation arrives.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Do not move the patient into the recovery position if you suspect trauma or C-spine injury.</p> </div> <p><b>Placing a patient in the recovery position</b></p> <ol style="list-style-type: none"> <li>1. Lift the patient's left arm above his head and cross his right leg over the left leg.</li> <li>2. Support the patient's face as you grasp his right shoulder.</li> <li>3. Roll the patient toward you onto his side (preferably the left side). Then place his right hand under the side of his face. If possible, move the patient's head, shoulders, and torso simultaneously as a unit without twisting. The head should be in as close to a midline position as possible.</li> <li>4. Flex the patient's top leg slightly at the knee.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>&lt;For all ventilation procedures discussed below, if you are unable to ventilate the patient adequately, reposition and try again. If the second try fails, assume the airway is blocked by a foreign body. Follow the guidelines in the next section for removing a foreign body airway obstruction. Demonstrate each procedure below on a mannequin.&gt;</b></p> <p><b>9.1 Mouth-to-Mask Ventilation Procedure</b></p> <p>This method uses a pocket face mask with a one-way valve to form a seal around the patient's nose and mouth. It is the preferred method because it eliminates <b>direct contact</b> with the patient and prevents exposure.</p> <ol style="list-style-type: none"> <li>1) Place the mask around the patient's mouth and nose. The narrower top portion of the mask should be seated on the <b>bridge of the nose</b>. The broader portion should fit the chin.</li> <li>2) Seal the mask by placing heel and thumb of each hand along the border of the mask and pressing firmly to provide a tight seal around the edges of the mask.</li> <li>3) Open the patient's airway, using the appropriate manoeuvre.</li> <li>4) Give breaths at the appropriate rate and duration, observing <b>chest rise</b> and <b>fall</b>. Listen for patient exhalation.</li> </ol> <p><b>9.2 Mouth-to-Barrier Device Ventilation Procedure</b></p> <p>There are two broad categories of barrier devices: <b>masks</b> and <b>shields</b>. Most have a one-way valve but have no exhalation port. The patient's exhaled air will leak out around the barrier device.</p> <ol style="list-style-type: none"> <li>1) Position the barrier device around the patient's mouth and nose, providing <b>an adequate seal</b>.</li> <li>2) Open the patient's airway, using the appropriate manoeuvre.</li> <li>3) Deliver breaths at the appropriate rate and depth, observing chest rise and fall. Listen for patient exhalation.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>9.3 Mouth-to-Mouth Ventilation Procedure</b></p> <p>The risk of contracting infectious diseases makes mouth-to-mouth ventilation very risky for use in the field. The decision to use this method is a personal one. Use barrier devices whenever possible.</p> <ol style="list-style-type: none"> <li>1) Open the patient's airway, using the appropriate manoeuvre.</li> <li>2) Gently pinch the patient's nose closed with your thumb and index finger (of the hand on the forehead), to prevent <b>air from escaping</b>.</li> <li>3) Take a deep breath and seal your lips around the patient's mouth, providing an adequate seal. If ventilating an infant or small child, cover both the mouth and nose with your mouth.</li> <li>4) Deliver breaths at the adequate rate and depth.</li> </ol> <p><b>Stoma Patients:</b> Occasionally, you may encounter a patient who has undergone a laryngectomy. This person will have a "stoma," a permanent opening from the trachea to the front of the neck. Perform direct mouth-to-stoma ventilation.</p> <p><b>10. Foreign Body Airway Obstruction (FBAO)</b></p> <p><b>10.1 Causes of Airway Obstruction</b></p> <p>There are upper and lower airway obstructions. An upper airway obstruction is anything that blocks the back of the mouth or throat, or the nasal passages. A lower airway obstruction is caused by breathing in a foreign body or by severe spasm of the bronchial passages, such as asthma. Airway obstruction can be caused by the following:</p> <p><b>&lt;Give participants time to fill in info below.&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Tongue:</b> The tongue falls back, blocking the throat. This problem is common in unconscious patients.</li> <li>• <b>Epiglottitis:</b> Occurs when patients try to force breathing. Also caused by allergies and spasms of different kinds.</li> <li>• <b>Foreign body:</b> Objects such as food, ice, toys, dentures, vomitus and liquids that remain in the upper portion of the throat or airways.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 7-10	<ul style="list-style-type: none"><li>• <b>Tissue damage:</b> Can be caused by a penetrating injury to the neck, crushing trauma to the face, inhalation of hot air (as occurs in fires), ingestion of chemicals, and severe neck trauma.</li><li>• <b>Illness:</b> Respiratory infections and certain chronic conditions (such as asthma) or Sudden Infant Death Syndrome may cause tissue inflammation or muscular spasms and obstruct the airways.</li></ul> <p>The most common airway obstruction in a responsive patient is <b>food</b>, and in the unresponsive patient it is the <b>tongue</b>. The focus of this lesson is primarily on removing upper FBAO.</p> <h3>10.2 Recognizing FBAO</h3> <p>The key to successful treatment is early recognition. Suspect FBAO in any victim who suddenly stops breathing, becomes cyanotic, and loses consciousness for no apparent reason.</p> <p>There are two types of FBAO – <b>partial</b> and <b>complete</b>.</p> <ul style="list-style-type: none"><li>• <b>Partial:</b> An object caught in the throat that does not totally block breathing. A patient with partial obstruction may have adequate or poor air exchange. With <b>adequate air exchange</b>, the patient may cough forcefully, though there may be wheezing between coughs. Do not interfere with patient's attempt to clear the airway. With <b>poor air exchange</b>, the patient will exhibit a weak, ineffective cough, high-pitched noise while inhaling, increased respiratory difficulty and possible cyanosis; treat this situation as a complete airway obstruction.</li><li>• <b>Complete:</b> The patient is unable to speak, breathe or cough. May clutch neck with thumb and finger – this gesture is known as the <b>universal sign of choking</b>. Movement of air will be absent.</li></ul>	





**LP 7-13**



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>11.2 Abdominal Thrusts — Unresponsive Adult or Child (Patient Lying Down)</b></p> <p><b>&lt;Give participants time to take notes on steps below.&gt;</b></p> <ol style="list-style-type: none"> <li><b>1) Position the patient <u>face up</u> (supine).</b></li> <li><b>2) Attempt to ventilate.</b> If unsuccessful, <b><u>reposition</u></b> the patient's head and try again. If still unsuccessful, go to the next step.</li> <li><b>3) Get in position.</b> Kneel astride the victim's thighs and place the heel of one hand against the patient's abdomen, midline, slightly above the navel and below the xiphoid process. Place the second hand directly on top of the first.</li> <li><b>4) Perform up to 5 abdominal thrusts.</b> Press into the abdomen with a quick upward thrust.</li> <li><b>5) Perform a finger sweep. In children, use this technique only if you <u>are able to see the foreign object</u>.</b> Use the tongue-jaw lift to open the patient's mouth. Insert the index finger of the other hand along the inside of the cheek into the throat, using a hooking action to dislodge the foreign body and lift it out.</li> <li><b>6) Repeat steps 2 through 5 until <u>patient's airway is opened</u>.</b></li> </ol> <p><b>11.3 Chest Thrusts — Pregnant or Obese Responsive Adult (Patient Standing or Sitting)</b></p> <p>Chest thrusts are to be used only with patients in late stages of pregnancy or with the markedly obese, when abdominal thrusts cannot be applied effectively.</p> <ol style="list-style-type: none"> <li><b>1) Get in position.</b> Stand behind the patient, with your arms directly under the patient's armpits, and encircle the patient's chest.</li> <li><b>2) Position your hands.</b> Place the thumb-side of your fist along the patient's sternum, avoiding the xiphoid process and margins of the rib cage.</li> <li><b>3) Perform a chest thrust.</b> Grab your fist with the other hand and perform backward thrusts until the until the object is expelled from the airway or the patient becomes unconscious. Repeat this step until patient airway is opened.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>11.4 Chest Thrusts — Pregnant or Obese Unresponsive Adult (Patient Lying Down)</b></p> <ol style="list-style-type: none"> <li><b>Position the patient.</b> Place the patient on his/her back and kneel close to the patient's side.</li> <li><b>Attempt to ventilate.</b> If unsuccessful, <b>reposition</b> the patient's head and try again. If still unsuccessful, continue with the following.</li> <li><b>Get in position.</b> Place the heel of your hand on the lower half of the patient's sternum. Place your other hand on top of the first. Do not press on the xiphoid process.</li> <li><b>Deliver up to 5 chest thrusts.</b> Each thrust must be a distinct downward motion.</li> <li><b>Perform a finger sweep.</b> Use the tongue-jaw lift to open the patient's mouth. Insert the index finger of the other hand along the inside of the cheek into the throat, using a hooking action to dislodge the foreign body and lift it out.</li> <li>Repeat steps 2 through 5 until patient's airway is opened.</li> </ol> <p><b>12. Managing FBAO in Infants</b></p> <p>Always suspect foreign body airway obstruction in infants who demonstrate a sudden onset of respiratory distress associated with gagging, coughing or wheezing. Most common causes are <b>toys</b> or <b>other small objects</b>. As mentioned earlier, airway obstructions may also be caused by <b>infection</b>. Suspect this condition if the infant has a fever with congestion, hoarseness or drooling. Do not attempt to relieve this form of obstruction and transport the patient immediately.</p> <p><b>12.1 Removing FBAO in Conscious Infant</b></p> <p><b><i>Perform the following procedure only if the infant has a complete obstruction or partial obstruction with poor air exchange, and only if you suspect a foreign object.</i></b></p> <ol style="list-style-type: none"> <li><b>Verify complete airway obstruction.</b> Serious breathing difficulty, ineffective cough, no strong cry.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<ol style="list-style-type: none"> <li>2) <b>Position the infant.</b> Straddle the infant face-down over one of your forearms, head <b>lower</b> than the body. Support the infant's head by holding the jaw with your hand.</li> <li>3) <b>Deliver 5 back blows.</b> Use the heel of your hand between the shoulder blades. If foreign object is not expelled, <b>position the infant face-up</b> on your arm, head lower than the body.</li> <li>4) <b>Deliver 5 chest thrusts.</b> Position your middle and ring fingers in the middle of the infant's sternum, just below the imaginary line between the infant's nipples. Use a quick downward motion.</li> <li>5) <b>Repeat steps 2 to 5 until effective</b>, or until the infant becomes unconscious.</li> </ol> <p><b>12.2 Removing FBAO in Unconscious Infant</b></p> <ol style="list-style-type: none"> <li>1) <b>Establish unresponsiveness.</b></li> <li>2) <b>Open airway and ventilate.</b> If still obstructed, <b>reposition</b> the infant's head and ventilate again.</li> <li>3) <b>Give up to 5 back blows and 5 chest thrusts.</b></li> <li>4) <b>Perform a tongue-jaw lift.</b> If you can see the foreign object, use a finger sweep to remove it.</li> <li>5) <b>Repeat steps 2-4</b> until effective.</li> </ol> <p><b>13. Cardiopulmonary Resuscitation (CPR)</b></p> <p>During respiratory arrest, the heart can continue to pump for several minutes and circulate oxygen. Without early intervention, respiratory arrest may lead to cardiac arrest. Once cardiac arrest occurs, circulation ceases and vital organs are deprived of oxygen.</p> <p>When respiratory and cardiac arrest occur together, the patient is considered <b>clinically dead</b>. Within 4 to 6 minutes without circulation, brain damage will begin, and after 8 to 10 minutes, the damage is irreversible.</p> <p>CPR involves a combination of chest compressions and artificial ventilations designed to revive a person and prevent biological death by mechanically keeping a person's heart and lungs working.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>CPR must begin as soon as possible.</b></p> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>13.1 Preparing for CPR</b></p> <p>No patient should undergo CPR until the need for resuscitation has been established by appropriate assessment. Before providing CPR you must determine unresponsiveness, breathlessness and pulselessness. Follow these steps:</p> <p><b>&lt;Give participants time to copy steps below.&gt;</b></p> <ol style="list-style-type: none"> <li><b>1) Establish unresponsiveness.</b> Ask the patient, “<b><u>Are you okay?</u></b>”, or shake/tap the patient. If unresponsive, position the patient properly (supine with arms along the body on a firm, flat surface, or blood flow will be compromised).</li> <li><b>2) Activate the EMS system.</b></li> <li><b>3) Check ABC’s.</b></li> </ol> <p><b>Airway:</b> Check for open airway. Use appropriate method to open airway.</p> <p><b>Breathing:</b> Use the look, listen and feel method to assess respirations. If the patient is not breathing, provide two ventilations. Use small puffs on infants.</p> <p><b>Circulation:</b> Check pulselessness. On an adult and child, check the carotid for 5-10 seconds. On an infant, check brachial pulse. If you detect no pulse, begin CPR immediately.</p> <p><b>NOTE</b> <b>&lt;Review each of these points with reference to initial assessment and physical exam.&gt;</b></p> <p><b>13.2 CPR Chest Compressions for Adults</b></p> <p><b>NOTE</b> <b>&lt;The specific steps for 1-rescuer &amp; 2-rescuer CPR will be covered in the stations. Advise participants to review Skill Checklists for specific performance guidelines.&gt;</b></p> <p><b>Chest compressions</b> consist of rhythmic, repeated pressure over the lower half of the sternum. When combined with artificial ventilation, it provides enough blood circulation to sustain life. Follow these steps:</p> <ol style="list-style-type: none"> <li><b>1) Position the patient.</b> Must be supine on firm, flat surface, with arms <b><u>along sides</u></b>.</li> <li><b>2) Expose the patient’s chest.</b> Remove the patient’s shirt or blouse, providing for patient’s privacy as much as possible.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>NOTE</b></p>	<ol style="list-style-type: none"> <li>3) <b>Get in position.</b> Kneel close to the patient's side, with your knees about as wide apart as your shoulders.</li> <li>4) <b>Locate the xiphoid process.</b> Feel the lower margin of the rib cage. Run your fingers along the rib cage to the notch where the ribs meet the sternum, in the centre of the lower chest.</li> <li>5) <b>Locate the compression site.</b> Measure two finger widths from the xiphoid toward the upper chest – this is where you will rest the heel of your first hand.</li> <li>6) <b>Position your hands.</b> Put your free hand on top of the first hand. Extend or interlace your fingers (do not rest them on the chest wall).</li> <li>7) <b>Position your shoulders.</b> They should be directly over your hands.</li> <li>8) <b>Perform chest compressions.</b> Keeping your arms <b>straight</b> and your elbows <b>locked</b>, thrust straight downward from your shoulders. Release pressure <b>completely</b> after each compression. However, do not lift or move your hands, or you will lose proper position. Count as you perform compressions.</li> </ol> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p><b>Adult CPR Summary – 9 years and older</b></p> <ul style="list-style-type: none"> <li>Compression depth: 4–5 cm.</li> <li>Compression rate: 80–100 per minute</li> <li>Each ventilation: 1.5–2 seconds</li> <li>Pulse location: carotid artery</li> <li>One-rescuer cycle: 15 compressions, 2 breaths</li> <li>Two-rescuer cycle: 5 compressions, 1 breath</li> </ul> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p style="text-align: center;"><b>13.3 CPR Chest Compressions for Infants and Children</b></p> <p><b>&lt;The specific steps for infant CPR will be covered in the stations.&gt;</b></p> <p>Cardiac arrest in infants and children is rarely caused by heart problems. Usually the cause is too little oxygen (hypoxia) due to injuries, suffocation, smoke inhalation, etc. For this reason, you should resuscitate an infant/child for one minute before activating the EMS system (if you are alone).</p> <ol style="list-style-type: none"> <li>1) <b>Position the patient.</b> Must be supine on firm, flat surface, with arms along sides. If an infant, place him or her on your forearm, using your palm to support the head.</li> <li>2) <b>Expose the patient's chest.</b> Remove the patient's shirt or blouse.</li> <li>3) <b>Locate the compression site.</b> In a child, use the same location as an adult. In infants, use one finger width below an imaginary line between the nipples.</li> <li>4) <b>Perform chest compressions.</b> For an infant, use the flat part of your middle and ring fingers to compress the sternum. For a child, use the heel of one hand. Release pressure <u>completely</u> after each compression. However, do not lift or move your hands, or you will lose proper position. Count as you perform compressions.</li> </ol> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p><b>Child CPR Summary – 1-8 years of age</b></p> <ul style="list-style-type: none"> <li>Compression depth: 3–4 cm. (1/3–1/2 total chest depth)</li> <li>Compression rate: 100 per minute</li> <li>Each ventilation: 1–1.5 seconds</li> <li>Pulse location: carotid artery</li> <li>One-rescuer cycle: 5 compressions, 1 breath</li> <li>Two-rescuer cycle: 5 compressions, 1 breath</li> </ul> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<div style="border: 1px solid black; padding: 10px; margin-bottom: 20px;"> <p><b>Infant CPR Summary – 1 year old and under</b></p> <ul style="list-style-type: none"> <li>• Compression depth: 1.5–2.5 cm. (1/3–1/2 total chest depth)</li> <li>• Compression rate: 100 per minute or more</li> <li>• Each ventilation: 1–1.5 seconds</li> <li>• Pulse location: brachial artery</li> <li>• One-rescuer cycle: 5 compressions, 1 breath</li> <li>• Two-rescuer cycle: 5 compressions, 1 breath</li> </ul> </div> <p><b>14. Special Considerations Regarding CPR</b></p> <p><b>14.1 Signs of Successful CPR</b></p> <p>“Successful” CPR does not mean that the patient survives—it only means that you performed it correctly. Very few patients will survive if they do not receive advanced cardiac life support (ACLS). The goal of CPR is to prevent the death of cells and organs for a few crucial minutes. The patient’s condition needs to be monitored throughout CPR to determine if CPR is effective.</p> <ul style="list-style-type: none"> <li>• Have someone feel for a pulse during compressions. A pulse should be palpable with every compression.</li> <li>• The chest should rise and fall with each ventilation.</li> <li>• The pupils may begin to react normally.</li> <li>• Patient’s skin colour may improve.</li> <li>• Patient may attempt to move and try to swallow.</li> <li>• Heartbeat may return.</li> </ul> <p><b>14.2 When Not to Begin CPR</b></p> <p>Usually, you perform CPR when the patient has no pulse. However, there are special circumstances under which CPR should not be initiated even when the patient has no pulse. CPR should not be initiated when any of the signs of certain death, mentioned earlier, are present. These include:</p> <ul style="list-style-type: none"> <li>• Obvious mortal wounds</li> <li>• Rigor mortis</li> <li>• Decomposition</li> <li>• Lividity</li> <li>• Stillbirth</li> <li>• Other (check local protocols)</li> </ul>	





Visual Aids and Other Materials	CONTENT	Time Elapsed																				
	<div><h3>14.3 Complications Caused by CPR</h3><p>Even properly performed CPR can cause injuries, including:</p><ul style="list-style-type: none"><li>• Fracture of the sternum and ribs</li><li>• Pneumothorax</li><li>• Haemothorax</li><li>• Cuts and bruises to the lungs</li><li>• Lacerations to the liver</li></ul><p>Most of these complications are rare. Take care to use proper technique. Remember that even if CPR results in complications, the alternative is death.</p><h3>14.4 Mistakes in Performing CPR</h3><table><tr><th colspan="2">Mistakes in Performing CPR</th></tr><tr><th>Problem</th><th>Result</th></tr><tr><td>Patient is not on a hard surface</td><td>Compressions are not effective</td></tr><tr><td>Patient is not in horizontal position</td><td>If patient's head is higher than the rest of the body, there is insufficient blood flow to reach the brain</td></tr><tr><td>Head-tilt chin-lift manoeuvre improperly performed</td><td>Open airway not ensured</td></tr><tr><td>Incomplete seal around the patient's mouth and/or nose</td><td>Ventilations are not effective</td></tr><tr><td>Nostrils not completely pinched and the patient's mouth is not fully open during mouth-to-mouth ventilation</td><td>Ventilations are not effective</td></tr><tr><td>Hands not in correct position or compressions incorrectly placed</td><td>Fractured ribs; fractured sternum; lacerated liver, spleen, lungs or heart or injured pleura as a result of fractured ribs.</td></tr><tr><td>Compressions too deep or too frequent</td><td>Insufficient amount of blood is pumped</td></tr><tr><td>Improper compression/ventilation ratio</td><td>Inadequate oxygenation of blood</td></tr></table></div>	Mistakes in Performing CPR		Problem	Result	Patient is not on a hard surface	Compressions are not effective	Patient is not in horizontal position	If patient's head is higher than the rest of the body, there is insufficient blood flow to reach the brain	Head-tilt chin-lift manoeuvre improperly performed	Open airway not ensured	Incomplete seal around the patient's mouth and/or nose	Ventilations are not effective	Nostrils not completely pinched and the patient's mouth is not fully open during mouth-to-mouth ventilation	Ventilations are not effective	Hands not in correct position or compressions incorrectly placed	Fractured ribs; fractured sternum; lacerated liver, spleen, lungs or heart or injured pleura as a result of fractured ribs.	Compressions too deep or too frequent	Insufficient amount of blood is pumped	Improper compression/ventilation ratio	Inadequate oxygenation of blood	
Mistakes in Performing CPR																						
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Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>14.5 Interrupting CPR</b></p> <p>Once you begin CPR, you should not interrupt for more than a few seconds to check for pulse and breathing, or to reposition yourself or the patient. In addition, you interrupt CPR to:</p> <ul style="list-style-type: none"><li>• Move the patient onto a stretcher</li><li>• Move the patient down a flight of stairs or through a hallway</li><li>• Loading or unloading the patient into the ambulance</li><li>• To allow for defibrillation or ACLS measures to be initiated</li><li>• Recover from physical exhaustion</li></ul> <hr/> <p><b><i>III. REVIEW</i></b></p> <p>Clarify points and answer questions before proceeding to the practicals.</p> <hr/> <p><b><i>IV. PRACTICAL EXERCISE</i></b></p> <p>See Practical Exercise worksheets. Instruct participants to bring their workbooks.</p> <hr/> <p><b><i>V. POST-TEST</i></b></p> <p>No Post-Test. Objectives will be evaluated in the practical exercises.</p> <hr/> <p><b><i>VI. CLOSE</i></b></p> <ol style="list-style-type: none"><li>1. Comments, suggestions.</li><li>2. Thank the participants and announce the next lesson.</li></ol>	



## Practical Exercises CPR and FBAO

Practical exercises will be split into two sections—one for FBAO manoeuvres and another for CPR.

### Section 1: FBAO Manoeuvres

**Stations 1 & 2: Conscious infant who later becomes unconscious.**

**Station 3 & 4: Conscious adult who later becomes unconscious.**

### Section 2: Cardiopulmonary Resuscitation

The first four stations consist of one-rescuer CPR, and the last four for two-rescuer CPR on adults and one-rescuer CPR on infants. More practice will be dedicated to adult CPR as this is what the participants will most often encounter.

**Stations 1 & 2: One-rescuer CPR on adults.**

**Stations 3 & 4: One-rescuer CPR on adults.**

**Stations 5 & 6: Two-rescuer CPR on adults.**

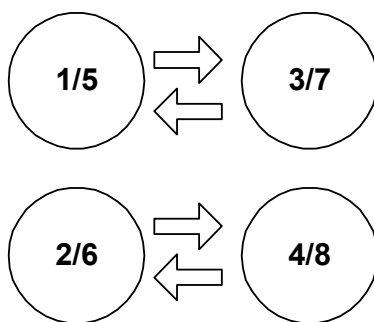
**Stations 7 & 8: One-rescuer CPR on infants.**

**Rotation type for this lesson:**

**Number of rotations: 2**

**FBAO Duration: 3 hours (1 hour, 30 minutes per station)**

**CPR Duration: 2 hours, 30 minutes (1 hour, 15 minutes per station)**



**<Give a brief explanation of the mechanics of this station, and allow practise to begin. Do not spend time on explanations already given in class. Allow the participants to practise as much as possible. The assistant in charge of each station will demonstrate the procedure, then supervise the participants' performance. >**



## **Practical Exercises**

### **Section 1: FBAO**

**Stations 1 and 2: FBAO – Conscious infant who later becomes unconscious.**

**Materials:**

- Latex gloves for each participant
- Disinfectant and dressings
- Face shields
- 5 infant mannequins (per availability)
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise.

**Stations 3 and 4: FBAO – Conscious adult who later becomes unconscious.**

**Materials:**

- Latex gloves for each participant
- Skills Checklist form
- Disinfectant and dressings
- 5 adult mannequins
- Face shields
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise.  
Explain the differences between the manoeuvres for adults and infants.



## **Practical Exercises Section 2: CPR**

### **Stations 1 and 2: One-rescuer CPR on adults.**

#### **Materials:**

- Latex gloves for each participant
- Disinfectant and dressings
- Face shields
- 3-5 adult mannequins
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise.

### **Stations 3 and 4: One-rescuer CPR on infants.**

#### **Materials:**

- Latex gloves for each participant
- Disinfectant and dressings
- Face shields
- 3-5 infant mannequins
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise. Explain the differences between the manoeuvres for adults and infants.



## **Practical Exercises**

### **Section 2: CPR**

#### **Stations 5 and 6: Two-rescuer CPR on adults.**

##### **Materials:**

- Latex gloves for each participant
- Disinfectant and dressings
- Face shields
- 3-5 adult mannequins
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise.

#### **Stations 7 and 8: One-rescuer CPR on infants.**

##### **Materials:**

- Latex gloves for each participant
- Disinfectant and dressings
- Face shields
- 3-5 infant mannequins
- 1 sheet per mannequin
- Skills Checklist form (for each participant)

Use the procedures described in the Skills Checklist and corresponding flipchart for this practical exercise.  
Explain the differences between the manoeuvres for adults and infants.



## MFR Lesson 7

### Skills Checklist

### Infant FBAO — Conscious/Unconscious Station 1 or 2

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Confirm airway obstruction.					
3. Position the infant.					
4. Give 5 back blows followed by 5 chest thrusts.					
5. Repeat Step 3 until effective or victim becomes unconscious.					
<b><i>(Victim becomes unconscious)</i></b>	—	—	—	—	—
6. Open the airway and try to ventilate. If still obstructed, reposition the patient's head and reattempt ventilations.					
7. Give 5 back blows followed by 5 chest thrusts.					
8. Perform a tongue-jaw lift. Then <b>only</b> if you see the object, perform a finger sweep to remove it.					
9. Repeat steps 6–8 until effective.*					
10. If airway obstruction is not relieved after about 1 minute, activate the EMS system.					

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Overall Performance:** ☐ Outstanding ☐ Successful ☐ Needs Improvement

Instructor: \_\_\_\_\_



**MFR Lesson 7**  
**Skills Checklist**  
**Adult FBAO — Conscious/Unconscious**  
**Station 3 or 4**

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Ask the patient, "Are you choking?"					
3. Give abdominal thrusts (chest thrusts for pregnant or obese patient).*					
4. Repeat thrusts until effective or victim becomes unconscious.					
<b><i>Victim Becomes Unconscious</i></b>	—	—	—	—	—
5. Activate the EMS system.					
6. Perform a tongue-jaw lift followed by a finger sweep to remove the object.					
7. Open airway and try to ventilate. If still obstructed, reposition patient's head and reattempt ventilations.					
8. Give up to 5 abdominal thrusts.					
9. Repeat steps 6–8 until effective.*					

*\* If the victim is breathing or resumes adequate breathing, place in recovery position and continue to monitor.*

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Overall Performance:** ☐ Outstanding ☐ Successful ☐ Needs Improvement

Instructor: \_\_\_\_\_





## MFR Lesson 7

### Skills Checklist

### Adult — One-Rescuer CPR

#### Station 1, 2, 3 or 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Establish unresponsiveness. Activate the EMS system.					
3. Open airway (head-tilt/chin-lift or jaw-thrust). Check breathing (look, listen, feel).					
4. Give 2 slow breaths, watch chest rise, allow for exhalation between breaths (1.5 to 2 seconds per breath).					
5. Check carotid pulse. If breathing is absent and pulse is present, provide rescue breathing (1 breath every 5 seconds, or about 12 breaths per minute).					
6. If no pulse, give cycles of 15 chest compression followed by 2 short breaths (rate of 80 to 100 compressions/minute).					
7. After 4 cycles of 15:2 (or about 1 minute), check pulse. If no pulse, continue 15:2 cycle beginning with chest compressions.					

Comments: \_\_\_\_\_

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**Overall Performance:** ☐ Outstanding ☐ Successful ☐ Needs Improvement

Instructor: \_\_\_\_\_



## MFR Lesson 7 Skills Checklist

### Adult — Two-Rescuer CPR Station 5 or 6

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Establish unresponsiveness. Activate the EMS system.					
<b>Rescuer 1</b>					
3. Open airway (head-tilt/chin-lift or jaw-thrust). Check breathing (look, listen, feel).					
4. Give 2 slow breaths (1.5 to 2 seconds per breath), watch chest rise, allow for exhalation between breaths.					
5. Check carotid pulse.					
<b>Rescuer 2</b>					
6. If no pulse, give cycles of 5 chest compressions followed by one slow breath by Rescuer 1 (80 to 100 compressions per minute).					
7. After 1 minute of rescue support, check pulse. If no pulse, continue 5:1 cycles.					

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

**Overall Performance:** ☐ Outstanding ☐ Successful ☐ Needs Improvement

Instructor: \_\_\_\_\_



## MFR Lesson 7

### Skills Checklist

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### Infant — One-Rescuer CPR

### Station 7 or 8

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines	Successful on Attempt				UTP
	1	2	3	4	
1. Proper use of PPE					
2. Establish unresponsiveness. If second rescuer is available to, ask him or her to activate the EMS system. If second rescuer is not present, continue through Step 5 for one minute.					
3. *Open airway (head-tilt/chin-lift or jaw-thrust). Check breathing (look, listen, feel).					
4. Give 2 slow, small breaths (1.5 to 2 seconds per breath), watch chest rise, allow for exhalation between breaths.					
5. Check brachial pulse. If breathing is absent but pulse is present, provide rescue breathing (one breath every 3 seconds, or about 20 breaths per minute).					
6. If no pulse, give cycles of 5 chest compression (at least 100 compressions per minute) followed by one small breath.					
7. *After a minute of rescue support, check pulse. If rescuer is alone, activate the EMS system. If no pulse, continue 5:1 cycles.					

Comments: \_\_\_\_\_

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<b>Overall Performance:</b> <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Improvement
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Instructor: \_\_\_\_\_

1

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## **Signs of Adequate Respiration**

- Chest and abdomen rise and fall with each breath
- Air can be heard and felt exiting the mouth or nose
- Ease of breathing
- Adequate rate

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## **Signs of Inadequate Respiration**

- Inadequate rise and fall of the chest
- Noisy breathing: bubbles, rales, stridor, whistling, etc.
- Increased respiratory effort

*more ...*

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*...cont'd.*

## **Signs of Inadequate Respiration**

- Cyanosis
- Inadequate rate
- Altered mental status

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## **Signs of Absent Respiration**

- No chest or abdominal movement
- Air cannot be heard or felt exiting the mouth or nose

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## Lesson 7 Station 1

### Infant FBAO

1. Confirm airway obstruction.
2. Position the infant.
3. 5 back blows, 5 chest thrusts.
4. Repeat #3 until effective.

*<If victim becomes unconscious, go to next step.>*

5. Open the airway, ventilate. Reposition patient's head if necessary.
6. 5 back blows, 5 chest thrusts.
7. Tongue-jaw lift. If object is visible, do finger sweep.
8. Repeat #5-7 until effective.
9. If ineffective after 1 minute, activate EMS system.

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## Lesson 7 Station 2

### Infant FBAO

1. Confirm airway obstruction.
2. Position the infant.
3. 5 back blows, 5 chest thrusts.
4. Repeat #3 until effective.

*<If victim becomes unconscious, go to next step.>*

5. Open the airway, ventilate. Reposition patient's head if necessary.
6. 5 back blows, 5 chest thrusts.
7. Tongue-jaw lift. If object is visible, do finger sweep.
8. Repeat #5-7 until effective.
9. If ineffective after 1 minute, activate EMS system.

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## Lesson 7 Station 3

### Adult FBAO

1. Ask "Are you choking?"
2. Give abdominal thrusts (chest thrusts for pregnant or obese patient).
3. Repeat #2 until effective.

*<If victim becomes unconscious, go to next step.>*

4. Activate EMS system.
5. Perform tongue-jaw lift. If object is visible, do finger sweep.
6. Open airway and ventilate. Reposition patient's head if necessary.
7. Give up to 5 abdominal thrusts.
8. Repeat #5-7 until effective.

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## Lesson 7 Station 4

### Adult FBAO

1. Ask "Are you choking?"
2. Give abdominal thrusts (chest thrusts for pregnant or obese patient).
3. Repeat #2 until effective.

*<If victim becomes unconscious, go to next step.>*

4. Activate EMS system.
5. Perform tongue-jaw lift. If object is visible, do finger sweep.
6. Open airway and ventilate. Reposition patient's head if necessary.
7. Give up to 5 abdominal thrusts.
8. Repeat #5-7 until effective.

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## Lesson 7 Station 1

### Adult CPR – One Rescuer

1. Establish unresponsiveness and activate EMS system.
2. Open airway, check breathing (look, listen, feel)
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.
5. If no pulse, 15 chest compressions followed by two breaths (15:2).
6. After four cycles of 15:2, check pulse. If no pulse, continue 15:2 cycles beginning with chest compressions.

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## Lesson 7 Station 2

### Adult CPR – One Rescuer

1. Establish unresponsiveness and activate EMS system.
2. Open airway, check breathing (look, listen, feel)
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.
5. If no pulse, 15 chest compressions followed by two breaths (15:2).
6. After four cycles of 15:2, check pulse. If no pulse, continue 15:2 cycles beginning with chest compressions.

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## Lesson 7 Station 3

### Adult CPR – One Rescuer

1. Establish unresponsiveness and activate EMS system.
2. Open airway, check breathing (look, listen, feel)
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.
5. If no pulse, 15 chest compressions followed by two breaths (15:2).
6. After four cycles of 15:2, check pulse. If no pulse, continue 15:2 cycles beginning with chest compressions.

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## Lesson 7 Station 4

### Adult CPR – One Rescuer

1. Establish unresponsiveness and activate EMS system.
2. Open airway, check breathing (look, listen, feel)
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.
5. If no pulse, 15 chest compressions followed by two breaths (15:2).
6. After four cycles of 15:2, check pulse. If no pulse, continue 15:2 cycles beginning with chest compressions.

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## Lesson 7 Station 5

### CPR – Two Rescuer

1. Establish unresponsiveness.

**Rescuer 1**

2. Open airway, check breathing (look, listen, feel).
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.

**Rescuer 2**

5. If no pulse, 5 chest compressions followed by one breath by Rescuer 1 (5:1).
6. After one minute of 5:1, check pulse. If no pulse, continue 5:1 cycles beginning with chest compressions.

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## Lesson 7 Station 6

### CPR – Two Rescuer

1. Establish unresponsiveness.

**Rescuer 1**

2. Open airway, check breathing (look, listen, feel).
3. Give two breaths, watch chest rise, allow for exhalation.
4. Check carotid pulse. If present, provide rescue breathing.

**Rescuer 2**

5. If no pulse, 5 chest compressions followed by one breath by Rescuer 1 (5:1).
6. After one minute of 5:1, check pulse. If no pulse, continue 5:1 cycles beginning with chest compressions.

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## Lesson 7 Station 7

### Infant CPR

1. Establish unresponsiveness.
2. Open airway, check breathing (look, listen, feel).
3. Give two small breaths, watch chest rise, allow for exhalation.
4. Check brachial pulse. If present, provide rescue breathing.
5. If no pulse, 5 chest compressions followed by one small breath.
6. After one minute, check pulse. If alone, activate EMS system. If no pulse, continue 5:1 cycles beginning with chest compressions.

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## Lesson 7 Station 8

### Infant CPR

1. Establish unresponsiveness.
2. Open airway, check breathing (look, listen, feel).
3. Give two small breaths, watch chest rise, allow for exhalation.
4. Check brachial pulse. If present, provide rescue breathing.
5. If no pulse, 5 chest compressions followed by one small breath.
6. After one minute, check pulse. If alone, activate EMS system. If no pulse, continue 5:1 cycles beginning with chest compressions.

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## Lesson 7 Objectives

- 1) List two causes of partial or total upper airway obstruction.
- 2) Demonstrate rescue breathing for adults, children and infants using a mannequin, with and without foreign body airway obstruction.

HOPE-...  
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...cont'd.

## Lesson 7 Objectives

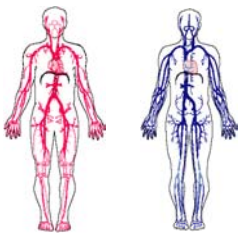
- 3) Describe and demonstrate CPR in adults, children, and infants using a mannequin.
- 4) Describe and demonstrate two-rescuer CPR for adults.

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## Circulatory System

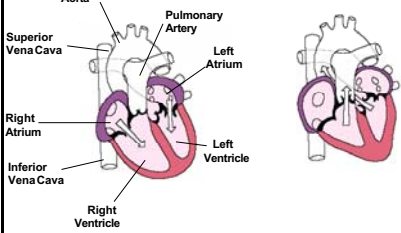


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## The Heart

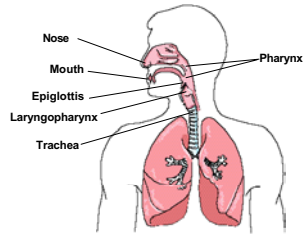


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## The Respiratory System

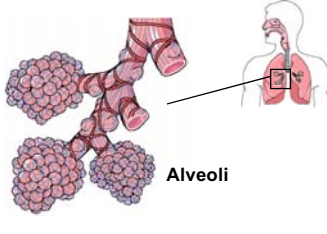


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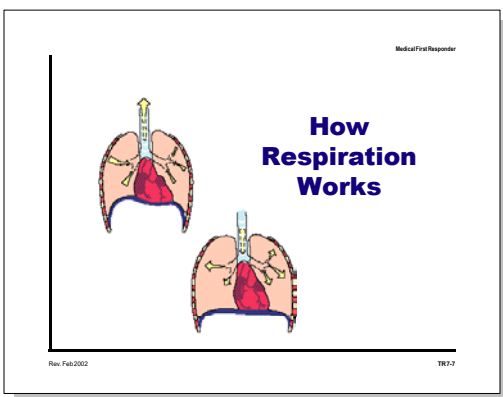
## The Respiratory System



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### Clinical Death

Occurs when a patient is in respiratory arrest (not breathing) or in cardiac arrest (heart not beating). The patient has a period of 4 to 6 minutes to be resuscitated without brain damage.

Clinical death can be reversed.

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### Biological Death

The moment the brain cells begin to die.

Biological death cannot be reversed.

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### Causes of Airway Obstruction

- Foreign body
- Tongue
- Enlarged tonsils
- Acute epiglottitis
- Disease

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### Partial Air Obstruction

- Weak, ineffective cough
- High-pitched noise when inhaling
- Increased respiratory difficulty and may clutch at the throat
- Cyanosis (bluish discoloration of the skin and mucous membranes)

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### Complete Air Obstruction

A patient with complete foreign body airway obstruction will not be able to speak and may grasp at his/her throat.

*(Universal Sign)*

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## Medical First Responder Course

# Lesson Plan 8 Oxygen Therapy

**Suggested Duration: 3 hours**

**Materials:**

- 6 pocket masks
- 6 adult bag-valve-masks
- 6 paediatric bag-valve-masks
- 4 D cylinders
- O<sub>2</sub> bottles with regulators
- 4 nasal cannulas
- 4 simple masks
- Gauze
- Antiseptic solution
- Transparencies

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Name five situations in which the application of oxygen is indicated.
2. Describe an oropharyngeal airway, a CPR mask, a bag-valve mask and demonstrate their uses.
3. List four key pieces of equipment in an oxygen delivery system.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 8-1 BRADY P. 103	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduction of lead instructor and assistants.</li> <li>2. Introduction of lesson.</li> <li>3. Introduction of the lesson objectives. Have one of the participants read them from the PM.</li> </ol> <hr/> <p><b><i>II. PRESENTATION</i></b></p> <p><b>1. Indications for Oxygen Use</b></p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Oxygen that is used for medical needs is colourless, and non-combustible. The air we breathe contains 21% oxygen. The oxygen used in medicine has a concentration of 100%.</p> </div> <p>A patient can require oxygen for a variety of medical needs. There are five typical examples in which the application of oxygen is indicated:</p> <ul style="list-style-type: none"> <li>• Heart failure/heart attack</li> <li>• Respiratory deficiency</li> <li>• Bleeding</li> <li>• Complications in childbirth</li> <li>• Poisoning</li> </ul> <p><b>&lt;Discuss possible hypoxia, how to recognize symptoms of hypoxia, and treatment.&gt;</b></p>	
TR 8-2		
TR 8-3	<p><b>Hazards Associated with Oxygen Use</b></p> <ul style="list-style-type: none"> <li>• <b>Fire:</b> Do not allow smoking or the use of a flame when using oxygen. Oxygen is not combustible, but it does increase the intensity of a fire and will cause fire to flare up.</li> <li>• <b>Explosion:</b> Never use oil or grease around an oxygen cylinder. Oil and grease near high concentrations of oxygen can cause an explosion.</li> <li>• <b>Valve damage:</b> Avoid dropping or placing a cylinder where it can fall. The regulator or valve can be damaged and the cylinder can become a projectile.</li> </ul>	
NOTE	<p><b>&lt;Discuss local protocols regarding authorization for the use of oxygen. Emphasise that oxygen is a medication. Discuss possible medical hazards.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<h2>2. Oxygen Delivery System</h2> <p>An oxygen delivery system consists of the following parts:</p> <ul style="list-style-type: none"> <li>• Oxygen cylinder with valve</li> <li>• Low pressure regulator</li> <li>• Flowmeter</li> <li>• Appropriate oxygen delivery device</li> </ul> <h3>2.1 Oxygen Cylinder With Valve</h3> <p>When providing oxygen in the field, the standard source is a seamless steel or lightweight alloy cylinder filled with pressurized oxygen. A green (steel) or gray (aluminium) cylinder identifies oxygen.</p> <p>The cylinders should be inspected daily and pressure-tested annually due to the high-pressure contents (2,000 psi).</p> <p><b>Valve:</b> The control located at the top of the cylinder, used to turn the bottle on and off. Keep in mind that a certain valve type might not work with different types of regulators.</p> <p><b>Most common cylinder types:</b></p> <ul style="list-style-type: none"> <li>Cylinder D – 350 litres</li> <li>Cylinder E – 625 litres</li> <li>Cylinder M – 3,000 litres</li> </ul> <p><b>NOTE</b> <i>&lt;Cylinder size and types of regulators may vary. Ask participants what size and types are used in their area.&gt;</i></p> <h3>2.2 Low-Pressure Regulators and Flowmeters</h3> <p><b>Regulators</b> reduce the high pressure (2,000 psi) from the oxygen cylinder and decrease it to between 40 and 70 psi. <b>Flowmeters</b> control the flow of oxygen, which is usually administered at between 2 and 20 litres per minute.</p>	
TR 8-4		
TR 8-5	<h3>2.3 Precautions When Giving Oxygen</h3> <ul style="list-style-type: none"> <li>• The pressure in a full cylinder is between 2,000 and 2,200 psi. Reduce the pressure to 40-70 psi before administering oxygen to a patient.</li> <li>• Appropriate delivery of oxygen to a patient is achieved by using a flowmeter and regulator. They are usually connected as one piece.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<div style="border: 1px solid black; border-radius: 15px; padding: 5px; text-align: center;"> <b>Oxygen is considered a medication.</b> </div> <p><b>2.4 Accessories for Ventilation</b></p> <p><b>&lt;Ask assistant to display each accessory as it is discussed.&gt;</b></p> <p><b>Oropharyngeal Airway</b></p> <p>Device usually made of plastic, can be inserted into the patient's mouth and curves back into the throat. The airway holds down the patient's tongue and creates an air passage. Airways come in several sizes, from 0 for newborns to number 7 for adults. Procedure for inserting airway:</p> <ol style="list-style-type: none"> <li>1) Select proper size. If the patient is a child, use a tongue depressor to help insert the device.</li> <li>2) Open the patient's mouth.</li> <li>3) Insert the adjunct upside-down (tip facing the roof of the mouth).</li> <li>4) Advance the adjunct gently until you encounter slight resistance (when the adjunct touches the back of the roof of the mouth).</li> <li>5) Turn the airway 180 degrees.</li> <li>6) Advance the adjunct until the flange rests on the patient's teeth, then secure it with tape.</li> </ol> <p><b>If the patient exhibits a gag reflex during insertion or after it is in place, remove the adjunct.</b></p> <p><b>CPR Mask</b></p> <p><b>&lt;The mask is applied to all unconscious patients.&gt;</b></p> <p>The pocket face mask is designed to aid the rescuer when providing ventilations during CPR. It is made of a soft plastic that conforms to the patient's face. The mask can come both with or without an oxygen inlet. Its use avoids direct contact with the patient's mouth and decreases the chance of contamination.</p>	
<p><b>NOTE</b></p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Bag-Valve-Mask (BVM) (manual resuscitator)</b></p> <p>Many different types are available. The bag-valve-mask is a hand-held device you squeeze to ventilate a patient. It comes in adult, child and infant sizes. All have the same basic parts: face mask, non-rebreather patient valve, a bag (rubber or vinyl), intake valve/oxygen reservoir valve, oxygen supply connection tube, and oxygen reservoir.</p> <p><b>2.5 Adjunct Equipment for Administering Oxygen</b></p> <p><b><u>Nasal Cannula</u></b></p> <p><b>Description:</b> Has two stems that are placed into the patient's nostrils. Used most often in a hospital setting. Most patients tolerate it well and it is the best accessory for administration of low-concentration oxygen.</p> <p><b>Flow Rate:</b> 1-6 lpm (each litre increases O<sub>2</sub> concentration 3-4%)</p> <p><b>O<sub>2</sub> Delivered:</b> 24-44% oxygen concentration</p> <p><b>Notes:</b> May cause the nasal mucus membranes to dry at higher flow rates. Appropriate for patients who cannot tolerate a mask.</p> <p><b><u>Non-Rebreather Mask</u></b></p> <p><b>Description:</b> Face mask with an oxygen reservoir bag and one-way valves. Requires a tight seal to ensure high oxygen concentration delivery.</p> <p><b>Flow Rate:</b> 12-15 lpm</p> <p><b>O<sub>2</sub> Delivered:</b> Approximately 80-90% oxygen concentration</p> <p><b>Notes:</b> Reservoir must always contain enough oxygen so that it does not deflate by more than one third when patient inhales (must maintain proper flow rate). Delivery system of choice for patients requiring high O<sub>2</sub> concentration. <b>Safety feature:</b> Exhalation port is open in case oxygen supply fails (prevents 100% O<sub>2</sub> delivery).</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b><u>Humidifier</u></b></p> <p><b>Description:</b> Non-breakable jar of water attached to the flowmeter. Provides moisture to the dry oxygen coming from the supply cylinder.</p> <p><b>Notes:</b> Must be kept clean. Can become a breeding ground for algae, harmful bacteria and fungal organisms. No longer used, as not indicated for short transport due to risk of infection.</p> <p><b>2.6 Mechanical Suction</b></p> <ul style="list-style-type: none"> <li>• Maintain airway at all times – keep free of blood, vomit, secretions and other liquids or objects. Use mechanical suction to remove these substances or objects.</li> <li>• Solid objects such as food, teeth or very thick secretions cannot always be removed with suction, and may require alternative equipment or a finger sweep.</li> <li>• Suction should be performed rapidly to decrease the chance of blood or other foreign matter from moving into the lungs, which may cause pneumonia or complete airway obstruction.</li> </ul> <p><b>Suction Equipment</b></p> <p>A suction unit consists of a suction source, a collection container, tubing and suction tips. May be portable or truck-mounted.</p> <ul style="list-style-type: none"> <li>• Suction devices use negative pressure. Manual or electrically powered, air or oxygen-powered.</li> <li>• Must have wide bore, thick walls, non-kinking tubing to fit a suction catheter.</li> <li>• Several disposable catheters should be available, made of either rigid or flexible plastic.</li> <li>• Unbreakable collection container with water for rinsing and cleaning.</li> <li>• Enough vacuum power and flow to be effective.</li> </ul> <p style="text-align: center;">• • • • •</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <p><b><i>III. PRACTICAL EXERCISES</i></b></p> <p>In their groups the participants rotate through the various stations according to the lesson plan.</p> <hr/> <p><b><i>IV. REVIEW</i></b></p> <ol style="list-style-type: none"><li>1. Review objectives and ensure everyone has understood them.</li></ol> <hr/> <p><b><i>V. EVALUATION</i></b></p> <ol style="list-style-type: none"><li>1. Allow 5 minutes for participants to complete the evaluation form.</li></ol> <hr/> <p><b><i>VI. CLOSING</i></b></p> <ol style="list-style-type: none"><li>1. Comments, suggestions.</li><li>2. Thank the participants and announce the next lesson.</li></ol>	





## Lesson 8

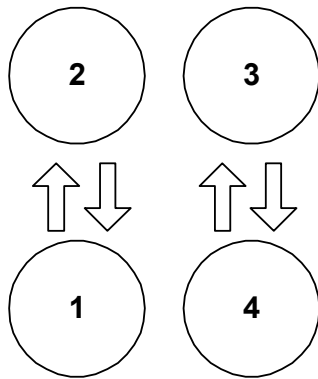
### Practical Exercises

### Oxygen Therapy

**Stations 1 and 3: Administering oxygen**

**Stations 2 and 4: Using airways, mask, and the bag-valve mask**

**Rotation type for this lesson:**



**Number of rotations: 2**

**Duration: 90 minutes (45 min. per station)**

Participants will practise in two groups. Both groups practise the same procedure with a mannequin. Rotate after everyone has practised. Protocols for scene safety, initial assessment and physical examination do not apply.

***<Give a brief explanation of the mechanics of this station, and allow practise to begin. Do not spend time on explanations already given in class. Allow the participants to practise as much as possible.>***



## **Stations 1 and 3: Administering oxygen**

### **Materials**

- 2 complete sets (oxygen cylinder, regulator, flowmeter and humidifier)
- 2 masks with reservoir
- 2 nasal cannulas to administer oxygen
- 2 adult mannequins

### **Procedure**

1. Remove the seal of the cylinder.
2. Clean the valve of the cylinder.
3. Connect the regulator to the cylinder.
4. Open the cylinder.
5. Connect the mask with the reservoir to the flowmeter.
6. Regulate the flow (according to the patient's medical needs).
7. Fill the reservoir bag.
8. Place the mask on the patient.
9. Repeat Steps 5, 6 and 8 using a nasal cannula in place of the mask.

## **Stations 2 and 4: Using airways, mask, and the bag-valve mask .**

### **Materials:**

- 2 complete sets (oxygen cylinder, regulator, flowmeter and humidifier)
- 2 CPR masks
- 2 oropharyngeal airways
- 4 double female oxygen tubes
- 2 adult mannequins
- 2 paediatric mannequins
- 2 bag-valve-masks (1 paediatric, 1 adult)

### **Procedure**

1. Inserting the adult and paediatric oropharyngeal airway.
2. Application of the CPR mask with oxygen.
3. Use of a bag-valve-mask.



## MFR Lesson 8 Skills Checklist

### Stations 1 and 2 –or– 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b>	Use of PPE.					
	Prepare oxygen cylinder.					
	Assemble regulator and cylinder.					
	Attach oxygen mask and adjust flow meter.					
	Attach nasal cannula and adjust flow meter.					
<b>Station 2</b>	Use of PPE.					
	Select and insert oropharyngeal airway.					
	Place, seal and ventilate with CPR mask.					
	Place, seal and ventilate with bag-valve mask.					
<b>Station 3</b>	Use of PPE.					
	Prepare oxygen cylinder.					
	Assemble regulator and cylinder.					
	Attach oxygen mask and adjust flow meter.					
	Attach nasal cannula and adjust flow meter.					
<b>Station 4</b>	Use of PPE.					
	Select and insert oropharyngeal airway.					
	Place, seal and ventilate with CPR mask.					
	Place, seal and ventilate with bag-valve mask.					

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:

Please write applicable comments on reverse, and check box: ☐



## **Lesson 8**

### **Post-Test**

### **Oxygen Therapy**

1. Name five situations in which the application of oxygen is indicated.

- *Heart failure/heart attack*
- *Respiratory deficiency*
- *Bleeding*
- *Complications of childbirth*
- *Poisoning*

2. Briefly describe the following devices and explain their uses (1-2 sentences for each):

- Oropharyngeal airway:  
*A curved breathing tube that lifts the patient's tongue and holds it forward*
- CPR Mask:  
*Prevents mouth-to-mouth contamination when performing CPR*
- Bag-valve-mask:  
*A hand-held device that you squeeze to manually ventilate the patient*

3. List four key pieces of equipment in an oxygen delivery system.

- *Cylinder with valve*
- *Low pressure regulator*
- *Flowmeter*
- *Appropriate oxygen delivery device*

1

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## Lesson 8

### Station 1

#### Administering Oxygen

1. Identify cylinder, remove seal.
2. Open cylinder for one second.
3. Place regulator over valve and align pins.
4. Tighten screw on regulator.
5. Open main valve.
6. Attach delivery device to regulator.
7. Adjust flowmeter.
8. Apply delivery device to patient.

RM p. 105-106

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## Lesson 8

### Station 3

#### Administering Oxygen

1. Identify cylinder, remove seal.
2. Open cylinder for one second.
3. Place regulator over valve and align pins.
4. Tighten screw on regulator.
5. Open main valve.
6. Attach delivery device to regulator.
7. Adjust flowmeter.
8. Apply delivery device to patient.

RM p. 105-106

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3

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## Lesson 8

### Station 2

#### Oropharyngeal Airway

1. Measure for proper size.
2. Insert with top pointing towards the roof of the mouth.
3. Gently rotate airway 180 degrees.
4. Continue inserting airway until flange rests on patient's teeth.

RM p. 89

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## Lesson 8

### Station 4

#### Oropharyngeal Airway

1. Measure for proper size.
2. Insert with top pointing towards the roof of the mouth.
3. Gently rotate airway 180 degrees.
4. Continue inserting airway until flange rests on patient's teeth.

RM p. 89

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## **Lesson 8**

### **Station 2**

#### **CPR Mask**

1. Place mask on patient with narrow portion seated on the patient's nose and attach oxygen supply.
2. Compress the mask firmly using both your thumbs, to create a seal.
3. Open patient's airway using jaw-thrust manoeuvre.
4. Deliver two slow breaths.
5. Determine if ventilations are adequate.
6. Continue to ventilate at proper rate.

RM p. 96

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## **Lesson 8**

### **Station 4**

#### **CPR Mask**

1. Place mask on patient with narrow portion seated on the patient's nose and attach oxygen supply.
2. Compress the mask firmly using both your thumbs, to create a seal.
3. Open patient's airway using jaw-thrust manoeuvre.
4. Deliver two slow breaths.
5. Determine if ventilations are adequate.
6. Continue to ventilate at proper rate.

RM p. 96

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## **Lesson 8**

### **Station 2**

#### **Bag-Valve Mask**

1. Open the patient's airway.
2. Select the correct size mask.
3. Connect the mask to the bag.
4. Place the mask on patient.
5. Compress the mask firmly on patient to create a seal, using your thumb(s) and forefinger(s).
6. Squeeze the bag with one hand or two.

RM p. 101-102

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## **Lesson 8**

### **Station 4**

#### **Bag-Valve Mask**

1. Open the patient's airway.
2. Select the correct size mask.
3. Connect the mask to the bag.
4. Place the mask on patient.
5. Compress the mask firmly on patient to create a seal, using your thumb(s) and forefinger(s).
6. Squeeze the bag with one hand or two.

RM p. 101-102

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## Lesson 8 Objectives

1. Name five situations in which the application of oxygen is indicated.
2. Describe an oropharyngeal airway, a CPR mask, a bag valve mask and demonstrate their uses.
3. List four key pieces of equipment used in an oxygen delivery system.

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TR8-1

2

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## Oxygen Therapy

- Heart failure/heart attack
- Respiratory deficiency
- Bleeding
- Complications of childbirth
- Poisoning

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TR8-2

3

Medical First Responder

## Hazards Associated With Oxygen

- Fire
- Explosion (oil, grease)
- Valve damage

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TR8-3

4

Medical First Responder

## Cylinder Types

- Cylinder D: 350 litres
- Cylinder E: 625 litres
- Cylinder M: 3,000 litres

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TR8-4

5

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## Precautions When Giving Oxygen

- Reduce the pressure to 40-70 psi before administering oxygen. The pressure in a full cylinder is 2,000-2,200 psi.
- Use a flowmeter and pressure regulator.

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TR8-5



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## **Medical First Responder Course**

# **Lesson Plan 9**

# **Haemorrhage and Shock**

**Approximate Duration:** 1 hour

### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

1. List four methods of controlling external haemorrhage.
2. List ten signs and symptoms of shock.
3. List the five steps for pre-hospital treatment of shock.
4. List the three steps for pre-hospital treatment for internal haemorrhage.





Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 9-1 TR 9-2	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce lead instructor and assistant:</li> <li>2. Presentation of the lesson.</li> <li>3. Present lesson objectives. Ask participants to read them out of the workbook.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p>Severe haemorrhage and shock are considered life-threatening emergencies. Appropriate care can make the difference between life and death.</p> <p>Evaluating the problems that threaten the patient's life is the first responsibility at the scene. Making the correct evaluation is of primary importance to the first responder.</p> <p><b>1. Review of the Organs and How They Work in the Circulatory System</b></p> <p><b>1.1 The Heart</b></p> <p>The heart is a hollow muscular organ.</p> <ul style="list-style-type: none"> <li>• The <b><i>right</i></b> side of the heart receives the blood coming from the body and pumps it to the lungs for reoxygenation.</li> <li>• The <b><i>left</i></b> side of the heart receives the oxygenated blood coming from the lungs and from there is pumped through the whole body.</li> </ul> <p><b>1.2 Arteries</b></p> <p>The arteries are the blood vessels that transport the blood to the body. They are of different diameters, ranging from very thick (aorta, femoral), to medium (radial) and small (arterioles). Arterial bleeding is characterised by a <b><i>bright red</i></b> colour.</p> <p><b>1.3 Capillaries</b></p> <p>Each artery is divided into smaller transport vessels until they narrow down into capillaries, the tiny vessels closest to the skin. Through their thin walls, the exchange of <b><i>oxygen</i></b> and <b><i>carbon dioxide</i></b> takes place. Other substances are also exchanged between the body's cells and the blood.</p>	
TR 9-3		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>1.4 Veins</b></p> <p>Veins are blood vessels that carry blood back to the heart. Veins do not have as much pressure as the arteries. Venous bleeding is characterised by a <b><i>dark red</i></b> colour.</p> <p><b>2. Blood</b></p> <p><b>2.1 COMPOSITION</b></p> <p>The solid portion of the blood consists of <b><u>white blood cells</u></b>, <b><u>red blood cells</u></b> and <b><u>platelets</u></b>. The liquid portion of blood is called <b><u>plasma</u></b>. The normal adult has approximately five to six litres of blood.</p> <p><b>2.2 FUNCTIONS</b></p> <ul style="list-style-type: none"> <li>• Blood transports <b><u>oxygen</u></b> as well as cells that combat <b><u>infection</u></b> and eliminate <b><u>waste products</u></b>.</li> <li>• Blood also has the capacity to <b><u>clot</u></b> (solidify); this process usually takes 6 to 7 minutes.</li> </ul> <p><b>3. Pulse</b></p> <p><b>NOTE</b> <i>&lt;Use the TR to show the location of the different pulses.&gt;</i></p> <p>The pulse can be felt more easily in areas of the body where <b><u>arteries</u></b> are closer to the skin and near a solid structure (bone).</p> <p>The most accessible pulse locations:</p> <ul style="list-style-type: none"> <li>• Radial</li> <li>• Femoral</li> <li>• Carotid</li> </ul> <p><b>NOTE</b> <i>&lt;Discuss why these are important. Discuss the blood pressure for each.&gt;</i></p> <p>Every time the heart pumps, you can feel the pulse of the arterial system.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>4. Haemorrhage</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> the loss of blood from the body. It can be external and or internal.</p> </div> <p><b>4.1 External Haemorrhage Types</b></p> <p>With external haemorrhage, the wound and loss of blood are visible.</p> <ul style="list-style-type: none"> <li>• <b>Arterial:</b> Arterial haemorrhage is bright red and characterised by blood spurts coinciding with the pulse.</li> <li>• <b>Venous:</b> Venous bleeding is steady and dark red.</li> <li>• <b>Capillary:</b> Blood flows smoothly out of the capillaries and is similar in appearance to venous bleeding</li> </ul> <p><b>4.2 Pre-hospital Treatment for External Haemorrhage</b></p> <ol style="list-style-type: none"> <li>1) <b>Apply direct pressure.</b> With a hand on the wound using a bandage or gauze dressing, apply pressure to control bleeding. A compressive bandage should follow the dressing.</li> <li>2) <b>Elevate extremity.</b> If the forearm is bleeding, it is not necessary to elevate the whole extremity, only the forearm. Apply direct pressure to the bleeding are as explained before.</li> <li>3) <b>Use pressure points.</b> Use pressure points only when direct pressure fails. <p>Example: If it is not possible to make a compression bandage, a pressure point could be used to control severe haemorrhage of an arm or a leg.</p> <ul style="list-style-type: none"> <li>– Arm: Press on the brachial artery to control the bleeding.</li> <li>– Thigh: Press on the femoral artery to control the bleeding from the leg.</li> </ul> </li> <li>4) Use a tourniquet.</li> </ol> <p><b>&lt;Immobilise extremity. Fractures may cause tissue damage. Immobilisation can quickly control the haemorrhage associated with the injury.&gt;</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<p><b>4.3 Using a Tourniquet</b></p> <p>A tourniquet is <b>only</b> used in a severe emergency when other means cannot stop the bleeding of an extremity. The tourniquet should be applied as <b>distal</b> as possible.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>DANGER:</b> Using a tourniquet can cause damage to the nerves and blood vessels. It can result in the loss of an extremity.</p> </div> <p><i>&lt;Check Brady, p. 287-290, for guidelines on use.&gt;</i></p> <p><b>5. Internal Haemorrhage</b></p> <p>Internal haemorrhaging can range from minor to a life-threatening problem. The loss of blood cannot be seen in internal bleeding. Examples:</p> <ul style="list-style-type: none"> <li>• A closed fracture of the femur can cause a loss of 1 litre of blood.</li> <li>• A laceration to the liver or spleen can cause a severe loss of blood, potentially fatal.</li> </ul> <p><b>5.1 Signs and Symptoms</b></p> <p>Some signs of internal bleeding can be identified. One or more of the following may present:</p> <ul style="list-style-type: none"> <li>• Coughing up bright red blood</li> <li>• Vomiting dark-coloured blood (the colour of coffee grounds)</li> <li>• Small or large areas of bruising</li> <li>• Rigid abdomen</li> </ul> <p><b>5.2 Pre-hospital Treatment for Internal Haemorrhage</b></p> <ol style="list-style-type: none"> <li>1) Maintain an open airway and provide high-flow oxygen per local protocol.</li> <li>2) Keep the patient warm, but be careful not to overheat him/her.</li> <li>3) Treat for shock.</li> </ol> <p>Transport the patient as soon as possible.</p> <p>Report the possibility of internal bleeding as soon as more highly trained EMS personnel arrive at the scene</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 9-5	<h2>6. Perfusion</h2> <p><b>Definition:</b> The circulation of blood throughout an organ.</p> <p>An organ is perfusing when oxygenated blood is entering through the arteries and is exiting through the veins.</p> <p>Perfusion maintains the cells in the organ by giving them oxygen and other nutrients and by removing waste products. If perfusion fails, it will result in the death of an organ.</p>	
TR 9-6	<h2>7. Shock</h2> <p><b>Definition:</b> Failure of the circulatory system to provide adequate oxygenated blood supply throughout the body (inadequate tissue perfusion).</p> <h3>7.1 Causes of Shock</h3> <p>Shock is caused by:</p> <ul style="list-style-type: none"> <li>• Inability of the heart to pump enough blood through the organs</li> <li>• Severe loss of blood; insufficient blood in the system</li> <li>• Excessive dilation of blood vessels. Blood volume will be insufficient to fill them and shock will develop.</li> </ul> <p>Any of the above can cause oxygen insufficiencies in the body's organs. There are different types of shock but the end result is the same – inadequate perfusion to the organs.</p>	
FC 9-1	<h3>7. 2 Signs of Shock</h3> <ul style="list-style-type: none"> <li>• Breathing: Shallow and rapid</li> <li>• Pulse: Rapid and weak</li> <li>• Skin: Pale, cool and clammy</li> <li>• Face: Pale, often with blue colour (cyanosis) in the lips, tongue and ear lobes</li> <li>• Eyes: Lacklustre, pupils dilated</li> </ul>	
FC 9-2		



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 9-3	<p><b>7.3 Symptoms of Shock</b></p> <ul style="list-style-type: none"> <li>• Nausea and possible vomiting.</li> <li>• Thirst</li> <li>• Weakness</li> <li>• Vertigo</li> <li>• Uneasiness and fear – in some patients these symptoms can be the first sign of shock.</li> </ul> <p>There is nothing the first responder can do to reverse the late stages of shock, but it is possible to keep the patient from deteriorating until a higher level of help arrives.</p> <p>It is of utmost importance that the patient be evaluated and treated to prevent the onset of shock.</p> <p><b>7.4 Pre-hospital Treatment for Shock</b></p> <ol style="list-style-type: none"> <li>1) Maintain open airway. If breathing is inadequate, administer oxygen.</li> <li>2) Prevent further blood loss (by using direct pressure, elevation or pressure points).</li> <li>3) Elevate the lower extremities 20-30 cm, only if there are no suspected spinal, neck, chest or abdominal injuries. If any one these injuries is suspected, keep the patient supine (face up).</li> <li>4) Keep the patient warm, but do not overheat.</li> <li>5) Provide care for specific injuries.</li> </ol> <p>Transport the patient immediately.</p> <hr/> <p><b>III. REVIEW</b></p> <ul style="list-style-type: none"> <li>• Internal bleeding</li> <li>• External bleeding</li> <li>• Shock</li> <li>• Signs and symptoms</li> <li>• Pre-hospital treatment</li> </ul> <hr/> <p><b>IV. CLOSE</b></p> <ol style="list-style-type: none"> <li>1) Comments, suggestions.</li> <li>2) Thank the class for their participation and announce the next lesson.</li> </ol>	



## **Lesson 9**

### **Post-Test**

# **Haemorrhage and Shock**

1. List the four methods of controlling external haemorrhage.
  - *Direct pressure*
  - *Elevation*
  - *Pressure points*
  - *Tourniquet*
2. List ten signs and symptoms of shock.
  - *Breathing: Shallow and rapid.*
  - *Pulse: Rapid and weak*
  - *Skin: Pale, cool and clammy*
  - *Face: Pale, often with blue colour (cyanosis) in the lips, tongue and ear lobes*
  - *Eyes: Lacklustre, pupils dilated*
  - *Nausea and possible vomiting*
  - *Thirst*
  - *Weakness*
  - *Vertigo*
  - *Uneasiness and fear*
3. List the five steps for pre-hospital treatment of shock.
  - 1) *Maintain open airway. If breathing is adequate, administer oxygen.*
  - 2) *Prevent further blood loss (by using direct pressure, elevation or pressure points).*
  - 3) *Elevate the lower extremities 20-30 cm, only if there are no suspected spinal, neck, chest or abdominal injuries. If any one these injuries is suspected, keep the patient supine (face up).*
  - 4) *Keep the patient warm, but do not overheat.*
  - 5) *Provide care for specific injuries.*
4. List the three steps for pre-hospital treatment for internal haemorrhage.
  - 1) *Maintain an open airway and provide high-flow oxygen per local protocol.*
  - 2) *Keep the patient warm, but be careful not to overheat him/her.*
  - 3) *Treat for shock.*

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## Signs of Shock

- Breathing is shallow and rapid
- Pulse is rapid and weak
- Skin is pale, cool and clammy

*more ...*

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*...cont'd.*

## Signs of Shock

- Face is pale, often with blue colour (cyanosis) of the lips, tongue and ear lobes
- Eyes are lacklustre, pupils are dilated

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## Symptoms of Shock

- Nausea and possible vomiting
- Thirst
- Weakness
- Vertigo
- Uneasiness and fear

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## Lesson 9 Objectives

1. List four methods of controlling external haemorrhage.
2. List ten signs and symptoms of shock.

*more ...*

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*cont'd.*

## Lesson 9 Objectives

3. List the five steps for pre-hospital treatment of shock.
4. List the three steps for pre-hospital treatment for internal haemorrhage.

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## Heart Circulation

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## Pulse Locations

Rev. Feb.2002 TRS-4

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## Perfusion

The circulation of blood throughout an organ.

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## Shock

Failure of the circulatory system to provide adequate oxygenated blood supply throughout the body (inadequate tissue perfusion).

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## Medical First Responder Course

# Lesson Plan 10

## Soft-Tissue Injuries

**Approximate Duration:** 4 hours

**Materials for each group of students:**

- 2 trauma dressings
- 12 gauze dressings (4 x 4)
- 6 sanitary napkins
- 3 rolls of Kling (6-in.)
- 1 roll of Kling (3-in.)
- Trauma scissors
- Pencil to simulate impaled object
- 3 triangular bandages
- 1 roll of tape
- paper cone cups
- 2 bulky dressings

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) List two steps to treat a closed wound.
- 2) List six steps to treat an open wound.
- 3) List the steps for pre-hospital treatment for eye, ear, nose and mouth injuries.
- 4) List the steps for pre-hospital treatment of abdominal and genital injuries.
- 5) Demonstrate the use of dressings and bandages to control bleeding when given a specific area of the body.
- 6) Demonstrate the pre-hospital treatment for the following:
  - Impaled object in the eye or cheek
  - Bleeding neck injuries



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 10-1 TR 10-2 TR 10-3</p>	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1) Introduce instructors and assistants.</li> <li>2) Present the lesson.</li> <li>3) Present lesson objectives. Ask participants to read them from the Workbook.</li> </ol> <p>This lesson covers soft tissue injuries to all parts of body except the thorax.</p> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Definition</b></p> <div> <p>Soft tissue injuries, commonly referred to as <b>wounds</b>, are injuries to the skin, muscle, nerves, and blood vessels.</p> </div> <p><b>2. Closed Wound</b></p> <div> <p><b>Closed wound:</b> Injury to the soft tissue beneath unbroken skin.</p> </div> <p>Closed wounds can involve superficial damage to the skin or can be severe with damage to internal organs. Small contusions generally do not need treatment, whereas more serious injuries can be fatal. Closed wounds are generally caused by impact with a <b><i>blunt</i></b> object.</p> <p><b>How to recognize closed wounds</b></p> <ul style="list-style-type: none"> <li>• Swelling</li> <li>• Tenderness</li> <li>• Discoloration</li> <li>• Possible deformity</li> </ul> <p><b>Pre-hospital treatment for closed wounds</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Apply “<b>RICE</b>” method: rest, ice, compress, elevate.</li> <li>2) Monitor the patient for any <b><i>rapid changes in vital signs</i></b> that might indicate internal bleeding, which should be treated by a physician.</li> <li>3) Treat for shock.</li> </ol> <p>Transport the patient as soon as possible.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 10-6</p> <p>TR 10-7</p> <p>TR 10-8</p>	<p><b>&lt;Severe trauma care will be discussed later in conjunction with the specific parts of the body.&gt;</b></p> <p><b>3. Open Wound</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Open wound:</b> A soft tissue injury resulting in breaking of the skin.</p> </div> <p><b>Types of open wounds:</b></p> <ul style="list-style-type: none"> <li>• Scratches and abrasions</li> <li>• Lacerations – regular and irregular</li> <li>• Penetration and puncture wounds</li> <li>• Avulsions</li> <li>• Amputations</li> <li>• Crushing injury (may be open or closed)</li> <li>• Gunshot wounds</li> <li>• Impaled object</li> </ul> <p><b>&lt;Ask participants for additional examples of open wounds.&gt;</b></p> <p><b>Pre-hospital treatment for open wounds</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) <b>Expose the wound.</b> Remove all clothing and expose soft tissue. Avoid removing clothing by pulling it over the patient's head. Best method is to remove clothing by cutting with trauma scissors.</li> <li>2) <b>Control bleeding.</b> Begin with direct pressure or indirect pressure and elevation. If wound continues to bleed use a pressure point. Use a tourniquet only as last resort.</li> <li>3) <b>Prevent contamination.</b> Remove debris and contamination around the surface of the wound. Do not try to remove embedded particles.</li> <li>4) <b>Dress and bandage.</b> Use a sterile dressing and secure with a bandage to cover the wound.</li> <li>5) Cover the patient. Keep patient calm.</li> <li>6) Treat for shock.</li> </ol> <p>Transport the patient as soon as possible.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<h2>4. Dressings and Bandages</h2>	
TR 10-9	<p><b>Dressing:</b> Any material used to cover a wound that helps control bleeding and aids in the prevention of additional contamination.</p>	
TR 10-10	<p><b>Bandage:</b> Any material used to hold a dressing in place.</p>	
TR 10-11	<p><b>Occlusive dressing:</b> Any water-resistant material (plastic or waxed paper) applied to a wound to prevent the entrance of air and the loss of moisture from internal organs.</p>	
TR 10-12	<p><b>Bulky dressing:</b> Multiple stacked dressings made to form a single dressing 2-3 centimetres thick, such as a thick sanitary towel or any similar material.</p>	
TR 10-13	<h3>4.1 Applying Dressings and Bandages</h3> <ul style="list-style-type: none"> <li>• Control bleeding</li> <li>• Apply the dressing using the aseptic technique.</li> <li>• Cover the wounds completely.</li> </ul>	
TR 10-14	<ul style="list-style-type: none"> <li>• Ensure that the dressing and the bandage are firm, fixed and comfortable, but not so tight as to affect circulation.</li> <li>• Ensure there are no loose ends that can get caught.</li> <li>• Avoid covering the fingertips.</li> </ul> <p>The pre-hospital treatment of wounds and soft tissue injuries is directed at controlling bleeding and preventing contamination.</p> <h3>4.2 Bandaging Unusual Wounds</h3> <h4>Penetrating Injury</h4> <ol style="list-style-type: none"> <li>1. Cover any open wound completely.</li> <li>2. Examine the patient for possible exit wound.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Impaled Objects</b></p> <ol style="list-style-type: none"> <li>1. Do not remove unless impaled in the cheek or obstructing the airway or CPR.</li> <li>2. Control bleeding.</li> <li>3. Stabilise the object with a bulky dressing and apply a bandage.</li> </ol> <p><b>Avulsion (skin flap)</b></p> <ol style="list-style-type: none"> <li>1. Clean the wound surface</li> <li>2. Return skin flap to original position</li> <li>3. Control bleeding</li> <li>4. Cover with bulky dressing and apply a bandage</li> </ol> <p><b>Amputations or unattached avulsion</b></p> <ol style="list-style-type: none"> <li>1. Clean the wound</li> <li>2. Control bleeding.</li> <li>3. Apply dressing and bandages</li> <li>4. Keep amputated part cool and moist, but not wet</li> </ol> <p><b>5. Special Situations</b></p> <p><b>5.1 Injuries to the Scalp</b></p> <p>Suspect spinal injury in any patient with a head injury. Do not apply direct pressure if you suspect a skull fracture.</p> <p><b>5.2 Wounds to the Eyes (puncture wound or impaled object)</b></p> <ol style="list-style-type: none"> <li>1. <b>Bandage the good eye</b> to prevent movement of injured eye.</li> <li>2. In an <b>unconscious patient</b>, close the eyes before blindfolding the patient to prevent the eyes from drying, which may cause blindness.</li> <li>3. <b>Treat an extruded eye the same way as you would treat an eye with an impaled object.</b> Do not replace the eye if it has been expelled. Cover it with a cup or cardboard cone before applying the bandage.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 10-15	<p><b>5.3 Injuries to the Ear</b></p> <p>Blood, clear fluid, or blood-tinged fluid draining from the ear may indicate skull fracture or severe head trauma.</p> <ul style="list-style-type: none"> <li>• Never probe the ear.</li> <li>• Never pack the ear to stop bleeding; check for clear fluid (CSF) which may indicate a skull fracture.</li> <li>• Place a loose, clean dressing across the opening to absorb the fluids.</li> <li>• Do not apply pressure.</li> </ul> <p><b>5.4 Nosebleeds</b></p> <p>A nosebleed in an emergency can be serious and should not be neglected. The loss of blood can be great and lead to shock. If the patient has a suspected skull fracture or spinal injury, do not try to stop the bleeding. (This topic will be discussed in more detail in the lesson on skull injuries.)</p> <p><b>Pre-hospital treatment for nosebleeds</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1. Maintain open airway.</li> <li>2. Pinch nostrils together or place a dressing between the upper lip and the gum and apply pressure.</li> <li>3. Keep patient seated and still.</li> <li>4. Do not pack the nose; check for clear fluid (CSF) which may indicate a skull fracture.</li> <li>5. Do not remove any objects you may find inside the nose.</li> <li>6. For avulsions, apply a compressive dressing.</li> </ol>	
TR 10-16	<p><b>5.5 Injuries to the Neck</b></p> <ul style="list-style-type: none"> <li>• Visible lacerations or other wounds can produce massive bleeding or air embolism.</li> <li>• Difficulty speaking; loss of voice</li> </ul>	
TR 10-17	<ul style="list-style-type: none"> <li>• Airway obstructions without foreign bodies in mouth, nose, or airway. Often caused by inflammatory process (subcutaneous emphysema).</li> <li>• Tracheal deviation</li> <li>• Deformities or depressions</li> <li>• Immobilise the patient if you suspect a spinal injury.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment for injuries to the neck</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1. If there is bleeding from a neck wound, apply <b>slight to moderate pressure</b> with an <b>occlusive dressing</b>. Tape down all edges of the dressing to form an airtight seal, to avoid air embolism. Do not delay treatment; cover injury with a gloved hand and apply direct pressure if necessary. Add a bulky dressing over the occlusive one. Never apply pressure to both sides of the neck at the same time. Never apply a pressure dressing completely around the neck.</li> <li>2. For patient without spinal injury, place patient on left side with a 15-degree incline (head lower), if possible.</li> <li>3. If an object is impaled in the neck, stabilise it in place with bulky dressings. Do not remove it.</li> <li>4. Treat for shock.</li> </ol> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>IMPORTANT: With any head, face, scalp, eye, ear, nose or neck injury, the MFR should also suspect a possible spinal injury.</b></p> </div> <p><b>5.6 Injuries to the Abdomen</b></p> <p>The abdomen contains solid and hollow organs. The rupture of <b>hollow organs</b> (stomach, large and small intestine) can cause the contents (acids, digestive enzymes, bacteria) to spill into the peritoneal cavity, causing an inflammatory reaction. Rupture of the <b>solid organs</b> (liver, spleen, etc.) can cause severe haemorrhage.</p> <p>A contusion may indicate injury to the abdomen or pelvis.</p> <p><b>Signs and symptoms of abdominal injury</b></p> <ul style="list-style-type: none"> <li>• Pain or cramps in the abdominal area, local or diffuse</li> <li>• Guarding the abdomen or lying down in foetal position</li> <li>• Tenderness of the abdomen</li> <li>• Signs of shock</li> <li>• Rigid, tense or distended abdomen</li> <li>• Mild discomfort progressing to intolerable pain</li> <li>• Deep, penetrating pain in the pelvis or lower back</li> <li>• Pain radiating to a shoulder or both shoulders</li> <li>• Vomiting blood, bright red or like coffee grounds.</li> <li>• Blood in the stool, bright red or tarry black.</li> </ul>	
TR 10-18		
TR 10-19		
TR 10-20		





Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment abdominal injuries</b></p> <p>Use universal precautions and secure the scene. <b>Be alert for patient vomiting.</b></p> <ol style="list-style-type: none"> <li>1) Cover all open wounds.</li> <li>2) Do not replace exposed internal organs – cover them with thick, moist sterile dressing. Then loosely cover moist dressing with occlusive dressing. Keep exposed area warm by placing a dressing or towel over the occlusive dressing.</li> <li>3) Do not remove impaled objects – stabilise them with bulky dressings.</li> <li>4) Constantly monitor vital signs.</li> <li>5) Put patient supine with legs in most comfortable position.</li> <li>6) Treat for shock.</li> </ol> <p><b>5.7 Injuries to the Genitals</b></p> <p><b>Pre-hospital treatment for wounds to genitalia</b></p> <p>Wounds to the genitals should be treated the same as any other wound. However, special care and attention should be given to protect the patient's privacy.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>IV. PRACTICAL EXERCISES</i></b> Divide the participants into four groups. Move into the station and continue practising the exercises. <hr/> <b><i>V. REVIEW</i></b> <b>&lt;Review objectives on page 1 to ensure participants have understood them clearly. Answer any questions.&gt;</b> <hr/> <b><i>VI. Post-Test</i></b> <ol style="list-style-type: none"><li>1) Divide the class into six groups.</li><li>2) An instructor in each group will evaluate each participant using the evaluation guide and verification of the achievement of the objectives.</li></ol> <hr/> <b><i>VII. CLOSE</i></b> <ol style="list-style-type: none"><li>1) Comments, suggestions.</li><li>2) Thank participants and announce the next lesson.</li></ol>	



## Lesson 10

### Practical Exercises

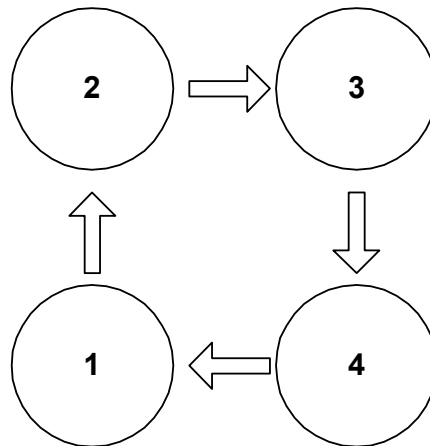
### Soft Tissue Injuries

- Station 1:** Treatment of bleeding neck injuries.
- Station 2:** Applying bandages and dressings to soft-tissue injuries.
- Station 3:** Treatment of extruded eyeball.
- Station 4:** Treatment of impaled objects.

**Rotation type for this lesson:**

**Number of rotations: 4**

**Duration: 3 hours (45 minutes per station)**



Pair up participants; one to act as the patient and the other as the rescuer. They then exchange places and repeat the exercises.



## **Lesson 10**

### **Practical Exercises (cont'd.)**

#### **Station 1: Treatment for bleeding neck injuries.**

##### **Materials:**

- PPE for all participants
- Four 6-inch elastic bandages
- Four 3-inch elastic bandages
- 4 rolls gauze bandage
- Sixteen (16) 4-inch x 4-inch dressings
- 4 occlusive dressings
- 4 rolls of cloth tape
- Evaluation forms

Set up participants in pairs. Each participant will take turns acting as the rescuer and then the patient. They will practise techniques for controlling arterial/venous bleeding with a compressive dressing. Initial assessment and physical exam protocols do not apply.

#### **Station 2: Treatment for soft-tissue injuries.**

##### **Materials:**

- PPE for all participants
- Four 6-inch elastic bandages
- Four 3-inch elastic bandages
- 4 rolls gauze bandage
- 16 4 x 4-inch dressings
- 4 rolls of cloth tape
- 4 triangular bandages
- Evaluation forms

Participants will practice the technique of applying a compressive dressing to control bleeding. Initial assessment and physical exam protocols do not apply.



## **Lesson 10**

### **Practical Exercises (cont'd.)**

#### **Station 3: Treatment of extruded and impaled eyeball**

##### **Materials:**

- PPE for all participants
- Four 6-inch elastic bandages
- Four 3-inch elastic bandages
- 4 rolls gauze bandage
- Sixteen (16) 4 x 4-inch dressings
- 4 occlusive dressings
- 4 rolls of cloth tape
- 4 pencils (simulated impaled object)
- 4 paper cups
- 4 pairs of scissors
- Evaluation forms
- Elastic bandages (Ace)
- 8 triangular bandages

Participants will practice treatment for an extruded and impaled eyeball. One participant plays the role of the patient while the other provides treatment. After finishing, they will exchange places. This technique is also used to secure an object impaled in the eye, cutting out the bottom of the cup. Initial assessment and physical exam protocols do not apply.



## **Lesson 10**

### **Practical Exercises (cont'd.)**

#### **Station 4: Treatment of impaled objects**

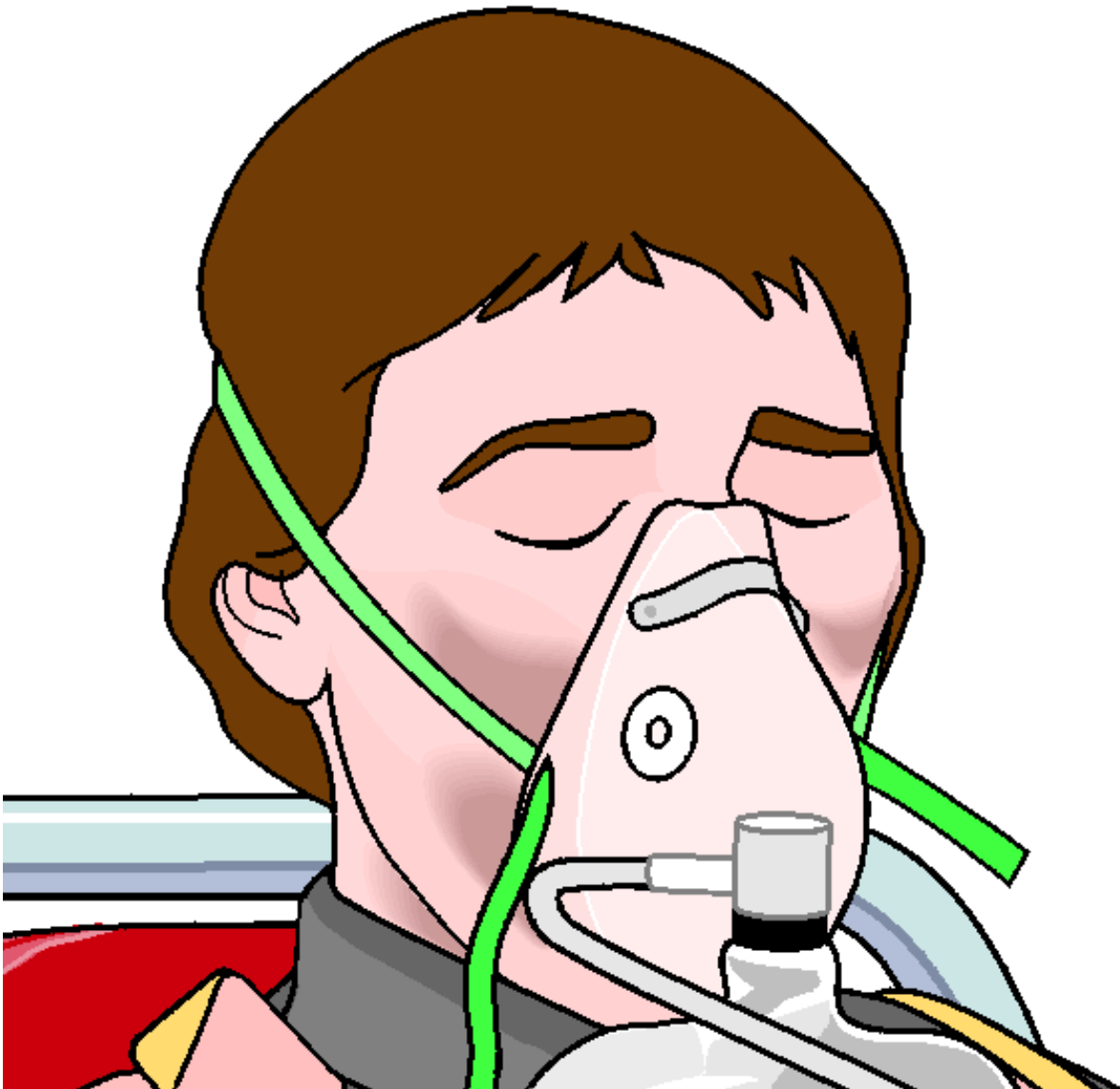
##### **Materials:**

- PPE for all participants
- Four 6-inch elastic bandages
- Four 3-inch elastic bandages
- 4 rolls gauze bandage
- Sixteen (16) 4 x 4-inch dressings
- 4 occlusive dressings
- 4 rolls of cloth tape
- 8 bulky dressings
- 3 pairs of scissors
- 4 pencils (simulated impaled object)
- Evaluation form

Participants will practice the technique for stabilising an impaled object. Participants take turns acting as the patient and then the rescuer. This technique is also used to fix an object impaled in other areas of the body such as the thigh, back, arm, etc. Initial assessment and physical exam protocols do not apply.



**(To be used in Station 2, Applying Tourniquet)**





## MFR Lesson 10 Skills Checklist

### Stations 1, 2, 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b>	Use of PPE.					
	Control bleeding and bandage bleeding neck wound.					
<b>Station 2</b>	Use of PPE.					
	Control bleeding.					
	Apply compressive bandage.					
	Apply tourniquet.					
<b>Station 3</b>	Use of PPE.					
	Bandage extruded eyeball.					
	Isolate and bandage impaled object in eye.					
<b>Station 4</b>	Use of PPE.					
	Stabilise and bandage impaled object.					

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:





## Lesson 10

### Post-Test

### Soft Tissue Injuries

1. List six steps used to treat an open wound.

- 1) *Expose the wound. Remove all clothing and expose soft tissue. Avoid removing clothing by pulling over patient's head. Best method is to remove clothing by cutting with trauma scissors.*
- 2) *Clean the surface of the wound. Remove debris and contamination on the surface of the wound. Do not try to remove embedded particles.*
- 3) *Control bleeding. Begin with direct pressure or indirect pressure and elevation. If wound continues to bleed use a pressure point. Use a tourniquet only as last resort.*
- 4) *Prevent contamination. Use a sterile bandage, clean cloth or a handkerchief to cover the wound.*
- 5) *Cover the patient. Keep patient calm.*
- 6) *Treat for shock.*

2. List two steps to treat a closed wound.

- 1) *Continually monitor the patient for any rapid changes in vital signs. Sudden changes might indicate internal bleeding, which should be treated by a physician.*
- 2) *Treat for shock.*

3. Describe the basic pre-hospital treatment for the following injuries:

#### **Mouth**

- *Maintain open airway.*
- *Cuts to the lips. Use rolled gauze. Place the dressing between the lips and gums. Ensure the dressing does not come loose and enter the airway.*
- *Lip avulsions. Apply compression to the wound.*
- *Cuts to the inside of the mouth. Do not pack the mouth with a bandage. Any dressing placed between the cheek and the gum needs to be held in position by hand. This is necessary to prevent the patient from swallowing the dressing. If possible, position the patient's head to allow the mouth to drain.*



## Lesson 10

### Post-Test (cont'd.)

#### Nose

- 1) *Maintain open airway.*
- 2) *Pinch nostrils together or place a bandage between the upper lip and the gum and press.*
- 3) *Keep patient seated and still.*
- 4) *Do not pack the nose; check for clear fluid (CSF) which may indicate a skull fracture.*
- 5) *Do not remove any objects you may find inside the nose.*
- 6) *For avulsions, apply a compressive dressing.*

#### Eyes

- 1) *Do not try to remove the impaled object. Give emotional support to the patient.*
- 2) *Stabilise the object. Do not apply direct pressure to lacerated globe. Use a roll of 3-inch gauze or folded 4 x 4-inch bandages on either side of the object.*
- 3) *Cover the object. Fit a disposable paper drinking cup or paper cone over or around the impaled object. Allow it to rest on the dressing. Do not allow it to apply pressure to the object.*
- 4) *Secure the dressings. Have another rescuer stabilise the dressings and cup while you secure them in place with tape or gauze. Do not secure the bandage to the top of the cup.*
- 5) *Administer oxygen per to local protocol.*
- 6) *Bandage the good eye to prevent movement of injured eye.*  
*In an unconscious patient, close the eyes before blindfolding the patient to prevent the eyes from drying, which may cause blindness.*
- 7) *Treat for shock.*

#### Outer ear

- *Minor laceration: Cover with dressing and apply a bandage.*
- *Severe laceration: Apply dressings to the injured ear and the side of the head.*
- *Avulsions: If still attached, use a bulky dressing and secure it with a bandage. If detached, keep the avulsed part wrapped in gauze, moist and cool in a plastic bag. If no plastic bag is available, wrap with gauze.*

#### Middle Ear

- *Never probe the ear.*
- *Never pack it to stop bleeding from the ear canal.*
- *Place a loose clean dressing across the opening to absorb the fluids.*
- *Do not apply pressure.*



## Lesson 10

### Post-Test (cont'd.)

4. What is the pre-hospital treatment for abdominal injuries?

- 1) *Cover all open wounds.*
- 2) *Do not replace exposed internal organs – cover them with thick, moist sterile dressing. Then loosely cover moist dressing with occlusive dressing. Keep injured area warm by placing a dressing or towel over the occlusive dressing.*
- 3) *Do not remove impaled objects – stabilise them with bulky dressings.*
- 4) *Constantly monitor vital signs.*
- 5) *Put patient on his/her back with legs in most comfortable position.*
- 6) *Treat for shock.*

5. What is the pre hospital treatment for genital injuries?

*Wounds to the genitals should be treated the same as any other wound. However, special care and attention should be given to protect the patient's privacy.*

1

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## **Lesson 10 Station 1**

### **Bleeding Neck Injuries**

1. Place gloved hand over the wound.
2. Apply an occlusive dressing.
3. Apply pressure using a bulky dressing.
4. Maintain pressure using elastic bandage over wound and under opposite arm.

**RM p. 308**

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Rev. Feb 2002 FC 10-1

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## **Lesson 10 Station 2**

### **Treatment of Soft-Tissue Injuries**

You must control bleeding using all of the following:

- Direct pressure
- Compressive bandage
- Elevation (above the heart)
- Pressure points

1. Cover the wound with sterile dressing.
2. Apply a rolled gauze bandage tightly over dressing.
3. If bleeding continues, apply elastic bandage.
4. Continue using elevation or pressure points, if needed.

**RM p. 314**

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Rev. Feb 2002 FC 10-2

3

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## **Lesson 10 Station 2**

### **Applying Tourniquet**

1. Apply a bulky dressing proximal to the wound.
2. Wrap a wide bandage around extremity and bulky dressing.
3. Tie a knot in the bandage material.
4. Tighten the tourniquet by turning a stick under the knot.
5. When bleeding stops, secure the stick in place.
6. Indicate on patient's forehead the use of a tourniquet and time applied.

**RM p. 288**

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Rev. Feb 2002 FC 10-3

4

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## **Lesson 10 Station 3**

### **Extruded / Impaled Eyeball**

1. Stabilise the patient's head.
2. Encircle the eye or impaled object with a gauze dressing (moistened for extruded eye).
3. Cover the eye or isolate the impaled object using a paper cup.
4. Secure the cup in place with a rolled gauze bandage.
5. Cover the patient's other eye.

**RM p. 376-379**

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Rev. Feb 2002 FC 10-4

## **Lesson 10**

### **Station 4**

#### **Impaled Objects**

1. Manually stabilise the object.
2. Expose the area around the wound.
3. Apply direct pressure to the edges of the wound control bleeding, if needed.
4. Use bulky dressing to stabilise object.
5. Apply a rolled gauze bandage or elastic bandage to secure the bulky dressing and impaled object.

1

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## Lesson 10 Objectives

- 1) List two steps to treat a closed wound.
- 2) List six steps to treat an open wound.
- 3) List the steps for pre-hospital treatment for eye, ear, nose and mouth injuries.

*more ...*

Rev. Feb.2002 TR 10-1

2

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*...cont'd.*

## Lesson 10 Objectives

- 4) List the steps for pre-hospital treatment of abdominal and genital injuries.
- 5) Demonstrate the use of dressings and bandages to control bleeding when given a specific area of the body.

*more ...*

Rev. Feb.2002 TR 10-2

3

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*...cont'd.*

## Lesson 10 Objectives

- 6) Demonstrate the pre-hospital treatment for the following:
  - Impaled object in the eye or cheek
  - Bleeding neck injuries

*more ...*

Rev. Feb.2002 TR 10-3

4

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## Soft-Tissue Injury

*(Also known as "wound.")*

Injury to the skin, muscle, nerves, and blood vessels.

*more ...*

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## Closed Wound

Injury to the soft-tissue beneath unbroken skin.

*more ...*

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## Open Wound

A soft-tissue injury resulting in breaking of the skin.

*more ...*

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## Types of Open Wounds

- Scratches and abrasions
- Lacerations – regular and irregular
- Penetration and puncture wounds

*more*

Rev. Feb.2002 TR 10-7

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...cont'd.

## Types of Open Wounds

- Avulsions
- Amputations
- Crushing injury
- Gunshot wounds
- Impaled object

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## Dressing

Any material used to cover a wound that helps control bleeding and also aids in the prevention of additional contamination.

Rev. Feb.2002 TR 10-9

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## Bandage

Any material used to hold a dressing in place

Rev. Feb.2002 TR 10-10

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## Occlusive Dressing

Any water-resistant material (plastic or waxed paper) that is applied to a wound to prevent the entry of air and loss of moisture from internal organs

Rev. Feb.2002 TR 10-11

12

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## Bulky Dressing

Multiple stacked dressings made to form single dressing 2-3 cm thick, such as a thick sanitary napkin or any similar material

Rev. Feb.2002 TR 10-12

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## Applying Dressings and Bandages

- Control bleeding.
- Apply the dressing using aseptic technique.
- Cover the wounds completely.

*more ...*

Rev. Feb.2002 TR 10-13

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*...cont'd.*

## Applying Dressings and Bandages

- Ensure that the dressing and the bandage are firm, fixed and comfortable, but not so tight as to affect circulation.
- Ensure there are no loose ends that can get caught.
- Avoid covering the fingertips.

*more ...*

Rev. Feb.2002 TR 10-14

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## Wounds to the Ear

- Never probe the ear.
- Never pack it to stop bleeding from the ear canal.
- Place a loose, clean dressing across the opening to absorb the fluids.
- Do not apply pressure.

*more ...*

Rev. Feb.2002 TR 10-15

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## Injuries to the Neck

- Visible lacerations or other wounds can produce massive bleeding or air embolism
- Difficulty speaking; loss of voice
- Airway obstructions without foreign bodies in mouth, nose, or airway; often caused by inflammatory process (subcutaneous emphysema)

*more ...*

Rev. Feb.2002 TR 10-16

17

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*...cont'd.*

## Injuries to the Neck

- Tracheal deviation
- Deformities and depressions
- Immobilise the patient if you suspect a spinal injury

*more ...*

Rev. Feb.2002 TR 10-17

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## Abdominal Injury

*Signs and Symptoms*

- Pain or cramps in the abdominal area, local or diffuse
- Guarding the abdomen or lying down in foetal position
- Tenderness of the abdomen

*more ...*

Rev. Feb.2002 TR 10-18



19

...cont'd.

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# Abdominal Injury

## Signs and Symptoms

- Signs of shock
- Rigid, tense or distended abdomen
- Mild discomfort progressing to intolerable pain
- Deep, penetrating pain in the pelvis or lower back

more...

Rev. Feb.2002

TR 10-19

20

...cont'd.

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# Abdominal Injury

## Signs and Symptoms

- Pain radiating to a shoulder or both shoulders
- Vomiting blood: bright red or like coffee grounds
- Blood in the stool: bright red or tarry black

Rev. Feb.2002

TR 10-20



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## **Medical First Responder Course**

# **Lesson Plan 11**

## **Musculoskeletal Injuries**

**Suggested Duration: 4 hours**

**Materials:**

- Transparencies
- 4 splints for upper extremities
- 4 splints for lower extremities
- 4 tourniquets
- 20 triangular bandages
- Tongue depressors
- Tape
- 4 blankets
- 4 pillows
- 8 rolls of bandage (elastic or Kling)
- 8 long backboards
- Complete human skeleton model
- Handouts

### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

1. Define an open fracture and closed fracture, and list four signs and symptoms.
2. Define a dislocation, a sprain, and a strain and list four signs and symptoms.
3. Give two reasons for immobilising a fracture, a sprain or a strain on a patient.
4. Demonstrate the pre-hospital treatment of fractures and dislocations of the extremities, hips and shoulder.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 11-1 TR 11-2</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce the instructor and assistant.</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives. (Have participants read them from the WB.)</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. The Skeletal System</b></p> <p>The adult skeleton is composed of 206 bones. The human skeleton consists of two main divisions, the axial skeleton and the appendicular skeleton.</p> <p><b>&lt;Quickly review the human skeletal system, identify the main bones and joints.&gt;</b></p> <p><b>&lt;Allow participants enough time to fill in WB.&gt;</b></p> <p><b>Functions of the skeletal system</b></p> <ul style="list-style-type: none"> <li>• Provides a <u>framework</u> for the body</li> <li>• Protects <u>vital organs</u></li> <li>• Provides for body <u>movement</u></li> <li>• Produces <u>red blood</u> cells</li> </ul> <p><b>Axial Skeleton</b></p> <p>The axial skeleton consists of 80 bones, including:</p> <ul style="list-style-type: none"> <li>• Skull</li> <li>• Thorax</li> <li>• Vertebral (spinal) column</li> </ul> <p><b>Appendicular Skeleton</b></p> <p>The appendicular skeleton consists of 126 bones which includes:</p> <ul style="list-style-type: none"> <li>• Shoulder: clavicle and scapula</li> <li>• Upper extremities: arms, hands, fingers</li> <li>• Pelvis (hips)</li> <li>• Lower extremities: legs, feet, toes</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 11-4</p>	<p><b>Joints (articulations)</b></p> <p>Joints are bone ends that fit into each other. There are several types of joints:</p> <ul style="list-style-type: none"> <li>• Immovable joints such as in the skull</li> <li>• Slightly movable joints such as the spine</li> <li>• Freely movable joints such as the elbow or knee joints (hinge) or the hip joint (ball and socket)</li> </ul> <p><b>Ligaments and Tendons</b></p> <ul style="list-style-type: none"> <li>• Ligaments connect and hold bones together at the joints</li> <li>• Tendons attach the skeletal muscles to the bone. These muscles control the movement of the joints.</li> </ul> <p><b>2. Fractures, Dislocations and Sprains</b></p> <p><b>2.1 Fractures</b></p> <p><b>Definition:</b> Any break in the continuity of a bone.</p> <p>Fractures can be open or closed.</p> <p><b>Closed injury:</b> One in which the overlying skin is intact. Proper splinting helps prevent closed fracture from becoming open fracture.</p> <p><b>Open injury:</b> One in which the skin has been broken or torn either from the inside by the injured bone, or from the outside by the object that caused the penetrating wound with the associated bone injury. The bone may or may not protrude through the wound. Open fractures are serious because of risk of contamination or infection is greater.</p> <p>Treat life-threatening injuries first. It is impossible to rule out a fracture through a physical exam of the patient. Many sprains and dislocations present signs and symptoms similar to a fracture.</p> <p><b>2.2 Dislocations</b></p> <p><b>Definition:</b> Injury in which a bone is moved out of its normal position in a joint and remains that way.</p> <p>A dislocation sometimes causes the tearing of ligaments and soft tissues if stretched far beyond the normal range of motion. The shoulder, elbow, fingers, hips, and ankles are the joints most frequently affected. Signs and symptoms of dislocation are similar to those of a fracture.</p>	
<p>TR 11-5</p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<h2>2.3 Sprains and Strains</h2> <p><b>TR 11-6</b></p> <p><b>Sprain:</b> Injury in which ligaments are stretched or partially torn, commonly associated with joint injuries.</p> <p>Do not confuse a sprain with a strain, which involves muscle injury.</p> <p><b>TR 11-7</b></p> <p><b>Strain:</b> Injury in which a muscle, or a muscle and tendon, are over-extended.</p> <p>Dislocation, fracture, strain and sprain may all be present in an injury.</p>	
NOTE	<h2>2.4 Signs and Symptoms of a Musculoskeletal Injury</h2> <p><i>&lt;Allow time for participants to take notes on this section in their workbooks.&gt;</i></p>	
TR 11-8	<ul style="list-style-type: none"> <li>• Deformity or angulation: compare with opposite limb</li> <li>• Pain and tenderness upon palpation or movement</li> <li>• Crepitus (grating) – a sound or feeling of broken bone ends rubbing together</li> </ul>	
TR 11-9	<ul style="list-style-type: none"> <li>• Swelling</li> <li>• Bruising or discoloration</li> <li>• Exposed bone ends</li> <li>• Joint locked in position – reduced motor ability or reduced ability to articulate a joint</li> <li>• Numbness and paralysis – may occur distal to site of injury caused by bone pressing on a nerve</li> <li>• Compromised circulation distal to injury evidenced by alteration in skin colour, temperature, pulse or capillary refill</li> </ul> <p><b>NEVER INTENTIONALLY INDUCE CREPITUS. This may cause or aggravate soft tissue injury.</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 11-10	<h3>3. Splinting</h3> <div> <b>Definition:</b> Applying a device to stabilise any painful, swollen or deformed body part. </div> <p>The primary objective of splinting is to prevent further movement of body parts. For any splint to be effective, it must immobilise adjacent joints and bone ends.</p> <p><b>&lt;Explain “adjacent” joints.&gt;</b></p>	
NOTE	<p><b>&lt;Allow participants to copy the bulleted items below into their workbooks.&gt;</b></p>	
TR 11-11	<p>Reasons for splinting include:</p> <ul style="list-style-type: none"> <li>• To prevent motion of bone fragments or dislocated joints</li> <li>• To reduce pain and suffering</li> <li>• To minimize damage to soft tissues (for example, nerves, arteries, veins and muscle)</li> <li>• To prevent a closed fracture from becoming an open fracture</li> <li>• To minimize blood loss or shock</li> </ul> <h3>3.1 Types of Splints</h3> <p>Effective splinting may require some ingenuity. Though you may carry many types of splinting devices, many situations will require you to improvise.</p> <p><b>&lt;Have participants give examples of improvised splints.&gt;</b></p> <p><b>Five basic types of splints:</b></p> <ul style="list-style-type: none"> <li>• <b>Rigid splint:</b> Requires limb to be in anatomical position. Ideal for long-bone injuries (for example, cardboard, wood).</li> <li>• <b>Conforming splint:</b> Can be moulded to different angles or surrounds the extremity (for example, air or vacuum splints).</li> <li>• <b>Traction splint:</b> Used specifically for femur fractures.</li> <li>• <b>Sling and swathe:</b> Two triangular bandages used to hold an injured arm in place against the body.</li> <li>• <b>Improvised splints:</b> a book, cardboard, pillow or blanket, etc.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<h3>3.2 General Rules for Splinting</h3> <p>Regardless of the method of splinting, general rules apply to all types of immobilization, as follows:</p> <ul style="list-style-type: none"><li>• Always communicate your plans with your patient if possible.</li><li>• Before immobilizing an injured extremity, expose and control bleeding.</li><li>• Always cut away clothing around the injury site before immobilizing the joint. Remove all jewellery from the site and below it.</li><li>• Assess P.M.S. (pulse, motor function and sensation)</li><li>• If limb is severely deformed or distal circulation is compromised (cyanosis distal to fracture site or no distal pulse), align the bone with gentle traction (pulling). If pain or crepitus worsens, discontinue. <b>Always follow your local protocol.</b></li><li>• Do not attempt to push protruding bone ends back into place. However, when realigning, they may slip back into place. Make a note if this occurs.</li><li>• For patient comfort and proper immobilization, pad voids between the body and the splint, since many rigid splints do not conform to body curves.</li><li>• Pad a splint before applying it.</li><li>• If a joint is injured, immobilize it and the bones above and below.</li></ul> <div><h4>AVOID TUNNEL VISION</h4><ul style="list-style-type: none"><li>• <b>Do not over-splint the patient</b> — in multi-system trauma patients, do not be distracted from life-threatening injuries by the gross appearance of non-critical injuries.</li><li>• Securing the patient to a long backboard supports and splints every bone and joint in one step without wasting time.</li></ul></div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 11-12</p>	<h4>4. Pre-hospital Treatment for Suspected Fractures, Dislocations or Sprains</h4> <p>Examining involves use of your senses and skills of inspection (looking), palpation (feeling) and auscultation (listening). Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Perform initial assessment. <ul style="list-style-type: none"> <li>• Identify and treat <b>life-threatening problems</b>.</li> <li>• Do not be distracted by <b>dramatic-looking injuries</b>.</li> <li>• Remember cervical collar and oxygen, if applicable</li> </ul> </li> <li>2) Perform a physical exam. You can use the mnemonic “D.O.T.S.” to guide your exam as you look for signs and symptoms of injuries. <ul style="list-style-type: none"> <li>• Check for visible <b>deformities</b>. Check all joints and bones through entire length of body.</li> <li>• Check for <b>open injuries</b>, common with extremity injuries.</li> <li>• Palpate for <b>tenderness</b>, which may underlie injury without deformity.</li> <li>• Check for <b>swelling and discoloration</b> – stabilize.</li> </ul> <p><b>For extremity injuries</b>, always assess for distal pulse, motor function and sensation of (P.M.S.), <i>before and after splinting</i>.</p> <ul style="list-style-type: none"> <li>• <b>Pulse:</b> Radial in upper extremity injuries, dorsalis pedis (top of foot) or posterior tibial pulse (back of ankles, medially) for lower extremities.</li> <li>• <b>Motor function:</b> check patient’s ability to move, such as wiggling toes or fingers (movement indicates intact nerves).</li> <li>• <b>Sensation:</b> Gently squeeze or pinch one extremity then the other, asking if patient can feel your touch.</li> </ul> <p><b>&lt;ALWAYS FOLLOW LOCAL PROTOCOLS&gt;</b></p> </li> </ol>	
<p>TR 11-13</p>	<ol style="list-style-type: none"> <li>3) <b>Stabilise the injury.</b> After completing a physical exam, secure injury site providing manual stabilisation. Do not release manual stabilisation of an injured extremity until it is properly and completely immobilised.</li> <li>4) <b>Expose the injury.</b> Cut away clothing and remove jewellery before swelling occurs.</li> </ol>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p>5) <b>Treat open wounds and control bleeding.</b> Cover with a clean or sterile dressing, avoid direct pressure over broken bone ends. Use pressure points as needed if bone ends protrude from injury, use caution not to allow bone ends to re-enter wound.</p> <p>6) <b>Prepare your splinting materials.</b></p> <p>7) Carefully splint individual injuries.</p> <p><b>&lt;Splint some extremities as found, realign others to restore pulse, motor function or sensation.&gt;</b></p> <ul style="list-style-type: none"> <li>• Measure or adjust the splint into position, maintain manual stabilisation as appropriate during splinting until procedure is complete.</li> <li>• Apply and secure to adjacent joints and injury site</li> <li>• Be careful not to restrict circulation</li> </ul> <p>8) <b>Reassess pulse, motor function and sensation.</b></p> <p>9) <b>Apply cold packs or ice</b> to injury site to reduce pain and swelling.</p> <p>10) Treat for shock.</p> <p><b>5. Pre-hospital Treatment for Specific Injuries and Application of Splints</b></p> <p><b>&lt;Discuss all signs and symptoms of fracture with participants as you discuss injuries.&gt;</b></p> <p><b>&lt;Initial assessment protocols should be performed on all patients.&gt;</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>IMPORTANT:</b> Always reassess pulse, motor function and sensation before and after splinting.</p> </div> <p><b>5.1 Splinting the Upper Extremities</b></p> <p><b><u>Shoulder and clavicle</u></b></p> <p><b>Signs and symptoms:</b> Shoulder appears to be “dropped,” deformity (asymmetry), pain.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Treatment:</b> Apply a sling and swath. Provide any padding necessary to fill void between body and arm.</p> <p><b><u>Humerus (Shoulder)</u></b>  <b>Signs and symptoms:</b> Pain, swelling, deformity.  <b>Treatment:</b> Rigid splint to outside of arm, pad voids, then apply sling and swath.</p> <p><b><u>Elbow</u></b>  <b>Important:</b> Splint in position found, do not attempt to straighten.  <b>Signs and symptoms:</b> Pain, swelling, deformity.  <b>Treatment:</b> If arm is bent at elbow, splint with sling &amp; swath alternate is pillow or blanket. If elbow is straight, splint entire arm, armpit to fingertips, both sides.</p> <p><b><u>Forearm and Wrist</u></b>  <b>Signs and symptoms:</b> Pain, swelling, deformity.  <b>Treatment:</b> Splint area with armboard, then sling and swath. (Pneumatic splints are an option.)</p> <p><b><u>Hands and Fingers</u></b>  <b>Important:</b> Pulse can be checked by capillary refill.  <b>Signs and symptoms:</b> Pain, swelling, deformity.  <b>Treatment:</b> If one finger is fractured, tape it to an adjacent finger or use tongue depressor to splint. If more than one finger is fractured, splint the entire hand in the position of function. Place a roll of bandage in palm of hand, or other object, then wrap entire hand and place on armboard.</p> <p><b>5.2 Splinting the Lower Extremities</b></p> <p><b><u>PELVIS</u></b></p> <ul style="list-style-type: none"> <li>• Pelvic injuries can be life-threatening due to <b>massive blood loss</b>.</li> <li>• Suspect shock.</li> <li>• Any force strong enough to injure the pelvis can also injure <b>the spine</b>.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Signs and symptoms of pelvic injury</b></p> <ul style="list-style-type: none"> <li>• Pain, especially when pressure is applied to iliac crests or pelvic bones</li> <li>• Inability to lift legs while lying on back</li> </ul> <p><b>Pre-hospital treatment for pelvic injury</b></p> <ol style="list-style-type: none"> <li>1) Minimize patient movement.</li> <li>2) Do not log roll or lift with pelvis unsupported.</li> <li>3) Place a folded blanket between patients legs from groin to feet and bind together with cravats (2 upper leg, 2 lower leg).</li> <li>4) Place the patient on long backboard.</li> <li>5) Treat for shock.</li> </ol> <p><b><u>HIP INJURIES</u></b></p> <p>With this type of injury, it is difficult to differentiate an upper femur fracture from a hip or pelvic fracture or dislocation. Assess for life threatening injuries as with pelvic injuries.</p> <p><b>Signs and symptoms of hip injury</b></p> <ul style="list-style-type: none"> <li>• Pain, swelling and discoloration</li> <li>• Inability to move leg(s)</li> <li>• Possible foot rotation (outward or inward)</li> </ul> <p><b>Pre-hospital treatment for hip injuries</b></p> <ol style="list-style-type: none"> <li>1) Bind legs together with a folded blanket between patient's legs</li> <li>2) Support the hip with pillows.</li> <li>3) Stabilise patient on long backboard, or use long boards along outer thigh, from foot to armpit with padding; and along the inner thigh, from groin to foot.</li> <li>4) Secure with cravats.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<p><b><u>FEMORAL INJURIES</u></b></p> <p>A femoral fracture can produce massive internal bleeding. Treat life-threats first.</p> <p><b>Signs and symptoms of femoral fracture</b></p> <ul style="list-style-type: none"> <li>• Pain (often intense)</li> <li>• Deformity</li> <li>• Rigidity</li> <li>• Shortened limb</li> </ul> <p><b>Pre-hospital treatment:</b> If you find the leg in a straight position, use two padded boards — one along the inner thigh from groin to the foot, the other along the outer thigh from the armpit to the foot. Secure with cravats.</p> <p><b><u>KNEE INJURIES</u></b></p> <p><b>Signs and symptoms:</b> Pain, swelling, deformity.</p> <p><b>Bent position:</b> Immobilize in the position found. The bones above and below it should be splinted with short padded boards.</p> <p><b>Straight position:</b> Use two padded long boards, the first on the inner thigh from groin to beyond foot. Place the second on the outer thigh, from hip to beyond foot. Secure with cravats.</p> <p><b><u>TIBIA OR FIBULA INJURY</u></b></p> <p><b>Signs and symptoms:</b> Pain, swelling, deformity</p> <p><b>Pre-hospital treatment:</b> Pneumatic splint, two padded long boards — groin to foot and thigh to foot. Secure with cravats. Alternative method for a closed injury to the tibia or fibula is to use a circumferential splint.</p> <p><b><u>ANKLE AND FOOT INJURIES</u></b></p> <p><b>Signs and symptoms:</b> Pain, swelling, deformity.</p> <p><b>Pre-hospital treatment:</b> Stabilize, remove shoes and socks if possible (expose injury). Circumferential or formable splint such as a pillow secured with cravats is recommended.</p> <p><b>Alternative:</b> Padded boards to mid-thigh</p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;"> <p><i>Always follow local protocols.</i></p> </div> <p><b>NOTE</b> &lt;Spinal injuries will be discussed in another lesson&gt;</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <p><b><i>III. REVIEW</i></b></p> <ol style="list-style-type: none"><li>1. Describe a fracture, a dislocation, a sprain and a strain and list their signs and symptoms.</li><li>2. Give two reasons for immobilizing a fracture, a sprain or a strain on a patient.</li><li>3. Demonstrate the pre-hospital treatment for fractures and sprains of the extremities, hips and pelvis.</li></ol> <hr/> <p><b><i>IV. PRACTICAL STATION</i></b></p> <p>Divide the class into four stations. Work in groups of two, with instructor's assistance. The participants will practice immobilizing or splinting fractures dislocation and sprains for each particular station.</p> <hr/> <p><b><i>V. EVALUATION</i></b></p> <ol style="list-style-type: none"><li>1. Objective 3 should be completed during practice stations.</li><li>2. Distribute the evaluation sheet; participants should complete it in five minutes.</li><li>3. Verify all objectives have been met.</li></ol> <hr/> <p><b><i>VI. CLOSING</i></b></p> <ol style="list-style-type: none"><li>1. Comments, suggestions.</li><li>2. Thank the group for their participation, and present the next lesson and the lead instructor.</li></ol>	



# Practical Exercises

## Musculoskeletal Injuries

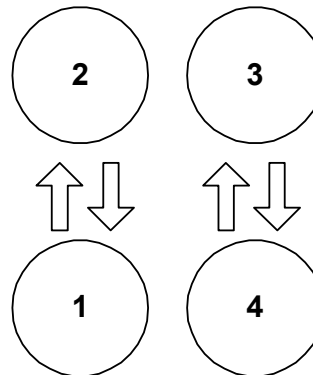
**Stations 1 and 3: Splint a injury to the Shoulder, upper arm, elbow, forearm, and wrist**

**Stations 2 and 4: Splint a injury to the hip, thigh, knee, lower leg, and ankle.**

**Rotation type for this lesson:**

**Number of rotations: 2**

**Duration: 3 hours (90 min. per station)**



Participants will practice in pairs. One will act as the patient and the other as the rescuer, then allow them trade places. The person in charge of each station supervises the performance of the other two participants. These exercises will not require arrival protocols, initial assessment or physical exam.

**<NOTE: After briefly explaining the procedures of this station, allow participants to begin practising. Do not spend time explaining material that was already covered during lecture.>**



## **Practical Exercises (cont'd.) Musculoskeletal Injuries**

### **Stations 1 and 3: Splint a injury to the Shoulder, upper arm, elbow, forearm, and wrist**

#### **Materials:**

- Latex gloves for each participant
- 12 triangular bandages
- 3 long rigid splint sets
- 3 medium rigid splint sets
- 3 short rigid splint sets
- Three 1-inch bandage rolls
- 3 blankets
- 3 pillows
- Instructor evaluation form

### **Station 2 and 4: Splint a injury to the hip, thigh, knee, lower leg, and ankle.**

#### **Materials:**

- Latex gloves for each participant
- 12 triangular bandages
- 3 long rigid splint sets
- 3 medium rigid splint sets
- 3 short rigid splint sets
- Three 1-inch bandage rolls
- 3 blankets
- 3 pillows
- Instructor evaluation form



## MFR Lesson 11

### Skills Checklist

#### Stations 1 and 2 –or– 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b> <b>or</b> <b>Station 3</b>	Use PPE.					
	Splint a fracture or a dislocation of the shoulder					
	Splint fracture of the upper arm.					
	Splint dislocation of a bent elbow.					
	Splint fracture of the forearm.					
	Splint fracture of the wrist using rigid splint or pillow.					
<b>Station 2</b> <b>or</b> <b>Station 4</b>	Use PPE.					
	Splint hip injury using two rigid splints.					
	Splint fracture of the thigh.					
	Splint fracture or dislocation of a bent knee.					
	Splint fracture of the lower leg.					
	Splint ankle injury using rigid splints or pillow.					

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:

Comments: \_\_\_\_\_

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## Lesson 11

### Post-Test

# Musculoskeletal Injuries

1. Describe an open and closed fracture, a dislocation, a sprain and a strain and list their signs and symptoms.

### **Fracture**

***Closed fracture:*** one in which the overlying skin is intact. Proper splinting helps prevent closed fracture from becoming open fracture.

***Open fracture:*** One in which the skin has been broken or torn either from the inside by the injured bone, or from the outside by the object that caused the penetrating wound with the associated bone injury. The bone may or may not protrude through the wound. Open fractures are serious because of risk of contamination or infection is greater.

### **Signs and symptoms of a fracture:**

- *Deformity or angulation: compare with opposite limb*
- *Pain and tenderness upon palpation or movement*
- *Crepitus (grating) – a sound or feeling of broken bone ends rubbing together*
- *Swelling*
- *Bruising or discoloration*
- *Exposed bone ends*
- *Joint locked in position – reduced motor ability or reduced ability to articulate a joint*
- *Decreased or absent sensory perception distal to injury*
- *Decreased or absent circulation distal to injury evidenced by alteration in skin colour, temperature, pulse or capillary refill*

### **Sprain**

*Injury in which ligaments are stretched or partially torn, commonly associated with joint injuries. (Do not confuse with strain, a muscle pull.)*

#### ***Signs and symptoms***

*Similar to the signs and symptoms of fracture or dislocation.*

### **Strain**

*Injury in which a muscle, or a muscle and tendon, are over-extended.*

#### ***Signs and symptoms***

*Similar to the signs and symptoms of fracture or dislocation.*



## Lesson 11

### Post-Test (cont'd.)

2. Give two reasons for immobilizing a fracture, a sprain or a strain on a patient.
  - *To prevent motion of bone fragments or dislocated joints*
  - *To reduce pain and suffering*
  - *To minimize damage to soft tissues (e.g., nerves, arteries , veins and muscle)*
  - *To prevent a closed fracture from becoming an open fracture*
  - *To minimize blood loss or shock*
  
3. Describe the pre-hospital treatment of fractures and sprains of the extremities, hips and pelvis.
  - 1) *Use universal precautions and secure the scene.*
  - 2) *Perform initial assessment.*
  - 3) *Perform a physical exam – D.O.T.S., P.M.S.*
  - 4) *Stabilize the injury. After completing a physical exam, secure injury site providing manual stabilisation. Do not release manual stabilisation of an injured extremity until it is properly and completely immobilized.*
  - 5) *Expose the injury. Cut away clothing and remove jewellery before swelling occurs.*
  - 6) *Treat any open wounds. Control bleeding. Cover with a clean or sterile dressing, avoid direct pressure over broken bone ends. Use pressure points as needed if bone ends protrude from injury, use caution not to allow bone ends to re-enter wound.*
  - 7) *Prepare splinting materials*
  - 8) *Carefully splint individual injuries (or immobilize the whole body on a long spine board)*
  - 9) *Reassess P.M.S.*
  - 10) *Apply cold packs or ice to injury site to diminish pain & swelling.*
  - 11) *Treat for shock*

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Medical First Responder Course

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*Make two copies of all  
flipcharts for stations in  
Lesson 11.*

*(Not including this page!)*

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## Lesson 11 Station 1 or 3

### Dislocation of the shoulder

1. Place a pad between the arm and chest.
2. Support the arm with a sling.
3. Immobilise the arm with a swath.

### Fracture of the shoulder

1. Stabilise the upper arm between two rigid splints.
2. Secure splints in place.
3. Support the arm with a sling.
4. Immobilise the arm with a swath.

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RM p. 409-410

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## Lesson 11 Station 1 or 3

### Fracture of the upper arm

1. Stabilise the arm between two rigid splints.
2. Secure the splints in place.
3. Secure the arm and splints to the patient's side using two swaths.

### Fracture of the forearm or wrist

1. Stabilise the forearm using one rigid splint (remember to pad wrist and hand).
2. Secure splint in place.
3. Support forearm with a sling.

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RM p. 410, 412

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Rev. Feb 2002 FC 11-3

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## Lesson 11 Station 1 or 3

### Fracture or dislocation of the elbow

— Splint the elbow in the position found —

#### If the elbow is bent:

1. Stabilise the arm between two rigid splints.
2. Secure the splints in place.
3. Support the arm and splints with a sling.

#### If the elbow is straight:

1. Stabilise the arm between two rigid splints.
2. Secure splints in place.
3. Secure the arm and splints to the patient's side using two swaths.

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RM p. 409-410

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Medical First Responder Course

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## Lesson 11

### Station 2 or 4

#### Fracture or dislocation of the knee

*— Splint the knee in the position found —*

**If the knee is bent:**

1. Stabilise the leg between two rigid splints.
2. Secure the splints in place.
3. Support the leg with a pillow or other bulky material.

**If the knee is straight:**

1. Stabilise the leg between two rigid splints.
2. Secure splints in place.

RM p. 412-414

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## Lesson 11

### Station 2 or 4

#### Fracture or dislocation of the ankle

**Method 1:**

1. Stabilise the ankle between two rigid splints.
2. Secure the splints in place.

**Method 2:**

1. Wrap the foot and ankle using a pillow or blanket.
2. Secure the pillow or blanket in place.

RM p. 415

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## Lesson 11

### Station 2 or 4

#### Hip injuries

1. Place folded blanket or other padding between the patient's legs.
2. Place rigid splint on inside of patient's leg, from groin to foot.
3. Place rigid splint on outside of patient's leg, from armpit to foot.
4. Secure splints in place.

RM p. 412

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## Lesson 11

### Station 2 or 4

#### Fracture of the thigh

1. Place rigid splint on inside of patient's leg, from groin to foot.
2. Place rigid splint on outside of patient's leg, from armpit to foot.
3. Secure splints in place.

**Fracture of the lower leg**

1. Stabilise the leg between two rigid splints.
2. Secure splints in place.

RM p. 412-414

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## Lesson 11 Objectives

1. Define an open fracture and closed fracture, and list four signs and symptoms.
2. Define a dislocation, a sprain, and a strain and list four signs and symptoms.

*more ...*

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...cont'd.

## Lesson 11 Objectives

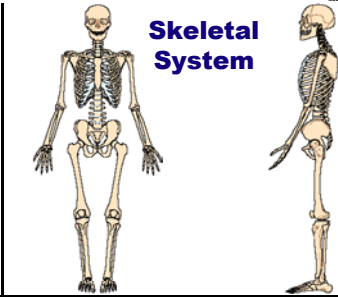
3. Give two reasons for immobilising a fracture, a sprain or a strain on a patient.
4. Demonstrate the pre-hospital treatment of fractures and dislocations of the extremities, hips and shoulder.

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## Skeletal System



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## Fracture

Any break in the continuity of a bone.

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## Dislocation

Injury in which a bone is moved out of its normal position in a joint and remains that way.

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## Sprain

Injury in which ligaments are stretched or partially torn, commonly associated with joint injuries.

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## Strain

Injury in which a muscle, or a muscle and tendon, are over-extended.

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## Fractures, Dislocations and Sprains

### *Signs and Symptoms*

- Deformity or angulation
- Pain and tenderness
- Crepitus (grating)
- Swelling

*more ...*

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*...cont'd.*

## Fractures, Dislocation and Sprains

### *Signs and Symptoms*

- Bruising or discoloration
- Exposed bone ends
- Joint locked in position
- Numbness or paralysis
- Compromised circulation

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## Splinting

Applying a device to stabilise any painful, swollen or deformed body part

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## Reasons for Splinting

- Prevent motion of bone fragments or dislocated joints
- Reduce pain and suffering
- Minimise damage to soft tissues
- Prevent closed fracture from becoming open fracture
- Minimize blood loss or shock

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## Pre-Hospital Treatment

### *for suspected fractures, dislocations and sprains*

1. Initial assessment: identify and treat life-threatening problems
2. Physical exam
3. Stabilise injury
4. Expose injury
5. Treat open wounds

*more ...*

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...cont'd.

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## Pre-Hospital Treatment

6. Prepare splinting materials
7. Splint injuries / immobilise body
8. Reassess P.M.S.
9. Apply cold packs or ice
10. Treat for shock

more...

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## **Medical First Responder Course**

# **Lesson Plan 12**

## **Injuries to the Skull, Spinal Column and Chest**

Approximate Duration: 3 hours, 45 minutes

### **Materials:**

- Transparencies and slides
- 16 bandage rolls
- Dressings
- Adhesive tape
- Thick plastic
- 20 triangular bandages
- 4 scissors
- 16 swollen dressings
- 4 pillows
- 4 cover
- 4 collars
- Gloves

### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

1. List five signs and symptoms of a skull fracture.
2. List six signs and symptoms of a spinal injury.
3. List five signs and symptoms of chest injuries.
4. Demonstrate the procedures for the evaluation and pre-hospital treatment of injuries to the skull and spine.
5. Demonstrate the procedures for the evaluation and pre-hospital treatment of rib fractures, flail chest and penetrating chest injuries.





Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 12-1 TR 12-2	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduction of instructor and of the assistants.</li> <li>2. Lesson Presentation.</li> <li>3. Present lesson objectives (ask participants to read aloud.)</li> </ol>	
TR 12-3	<p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Review of the Axial Skeleton</b></p> <p><b>1.1 Bones of the head</b></p> <p>The <b>skull</b> (cranium) has a number of broad, flat bones that form a hollow shell. The top (including the forehead), back and sides of the skull make up the cranium. It houses and protects the brain.</p> <ul style="list-style-type: none"> <li>• <b>Cerebrospinal fluid</b> (CSF) is a clear, water-like <b><i>cushion</i></b> that protects the brain and spinal cord from trauma.</li> <li>• The cranial vault is quite strong in adults and provides effective protection. However, even without a skull fracture, the brain can be damaged by trauma.</li> </ul>	
TR 12-4	<p><b>1.2 Bones of the face</b></p> <ul style="list-style-type: none"> <li>• There are several small bones in the face. They give shape to the face and permit the jaw to move. These small bones are fused together except for the mandible (temporomandibular joint, or TMJ) which allows the jaw to move.</li> </ul>	
TR 12-5	<p><b>1.3 Spinal Column</b></p> <p>The spinal column houses and protects the spinal cord. The spinal column is the central supportive bony structure of the body. It consists of 33 bones known as <b><i>vertebrae</i></b>. The spine is divided into five sections:</p> <ol style="list-style-type: none"> <li>1) <b>Cervical</b> spine (the neck, consisting of 7 vertebrae)</li> <li>2) <b>Thoracic</b> spine (the upper back, consisting of 12 vertebrae)</li> <li>3) <b>Lumbar</b> spine (lower back, consisting of 5 vertebrae)</li> <li>4) <b>Sacrum</b> (lower part of spine, consisting of 5 <b><i>fused</i></b> vertebrae)</li> <li>5) <b>Coccyx</b> (tailbone, consisting of 4 <b><i>fused</i></b> vertebrae).</li> </ol> <p>An injury to the spinal column can cause paralysis or death if it affects the cervical region.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 12-6	<p><b>1.4 Chest</b></p> <ul style="list-style-type: none"> <li>• <b>Bony structures:</b> The chest or rib cage includes the <u>ribs</u>, the thoracic <u>vertebrae</u> and the <u>sternum</u>. The ribs are attached at the back to the vertebrae. All but the bottom <u>two</u> ribs are attached to the sternum.</li> <li>• <b>Organs:</b> The thoracic cavity contains the <u>lungs</u>, the <u>heart</u> and the <u>major</u> blood vessels (arteries and veins). Damage to the rib cage can cause injury to the vital organs.</li> </ul> <p><b>2. Specific Injuries</b></p> <p><b>2.1 Skull fractures</b></p> <p>The primary function of the skull is to provide protection for the brain. The skull is not easily fractured. A skull fracture may be suspected with any significant trauma to the head.</p> <p>A skull fracture may occur with an open or closed wound. With a skull fracture, the MFR should suspect the possibility of a brain injury. Keep in mind that with any head injury, there is also concern for possible spine injury.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"><b>DANGER!</b></p> <ul style="list-style-type: none"> <li>• Do not try to remove an object impaled in the skull – stabilise it with bulky dressings.</li> <li>• Do not try to stop the flow of cerebrospinal fluid if the fluid is leaking from the ears or a head wound. Cover the opening loosely with sterile gauze dressing.</li> </ul> </div> <p><b>Signs and symptoms of skull fractures</b></p> <ul style="list-style-type: none"> <li>• Altered mental status, ranging from confusion to unresponsiveness</li> <li>• Pain or inflammation at the injury site</li> <li>• Deep laceration or haematoma in the scalp or forehead</li> <li>• Softness or depression of the skull</li> <li>• Facial bruising</li> <li>• Bruising behind the ears or “Battle’s Sign”</li> <li>• Bruising around the eyes, or “raccoon eyes”</li> <li>• One or both eyes appear sunken</li> </ul>	
SL 12-1		
SL 12-2 SL 12-3		



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>SL 12-4 SL 12-5 SL 12-6 SL 12-7</p> <p>NOTE</p>	<p><b>Signs and symptoms of skull fractures (cont'd.)</b></p> <ul style="list-style-type: none"> <li>• Unequal pupil size</li> <li>• Headache, disabling in severity or appearing suddenly</li> <li>• Blood or cerebrospinal fluid leaking from the ears or nose</li> <li>• Deterioration of vital signs</li> <li>• Nausea and vomiting</li> <li>• Abnormal posturing</li> <li>• Seizure</li> </ul> <p><b>2.2 Pre-hospital treatment for skull fractures</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) <b>Perform initial assessment.</b> Treat life-threatening conditions. If brain injury is suspected, hyperventilate patient at 25 rpm.</li> <li>2) <b>Control bleeding.</b> Do not try to stop the draining of blood or cerebrospinal fluid from the nose and ears.</li> <li>3) Suspect cervical injury or another type of injury to the spinal column. <b>Manually immobilise</b> head and neck in neutral in-line position. Apply cervical immobilisation device.</li> <li>4) <b>Administer oxygen</b> per local protocol.</li> <li>5) <b>Cover and bandage</b> open wounds.</li> <li>6) <b>Position the patient properly</b> and do not allow patient to move or change positions. If the patient is not hypotensive, consider elevating the head 30 degrees. <b>Caution:</b> Be alert for possible patient vomiting.</li> <li>7) <b>Assess level of consciousness.</b> Monitor vital signs.</li> </ol> <p><b>2.3 BRAIN INJURIES</b></p> <p><b>&lt;Consider all suspected head injuries to be serious.&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Open/penetrating:</b> An open brain injury is accompanied by a break in the skull, such as that caused by a fracture or an impaled object. This usually implies exposure of the cranial cavity.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<ul style="list-style-type: none"> <li>• <b>Closed:</b> A closed brain injury does not involve a break in the skull although the skin may be broken; even so, the brain can be seriously injured.</li> </ul> <p><b>Signs and symptoms of brain injury</b></p> <ul style="list-style-type: none"> <li>• Vomiting</li> <li>• Sickness</li> <li>• Weakness</li> <li>• Vision problems</li> <li>• Headache</li> <li>• Unconsciousness or decreased level of consciousness</li> <li>• Posture change (decorticate and decerebrate)</li> <li>• Altered breathing</li> </ul> <p><b>Pre-hospital treatment</b> for brain injuries is the same as those indicated for skull fractures.</p> <h2>2.4 FACIAL FRACTURES</h2> <p>The main danger of facial fractures is <b><u>the possibility of bone fragments and blood causing airway obstruction</u></b>. Always check for airway obstruction.</p> <p><b>Signs and symptoms of facial fracture</b></p> <ul style="list-style-type: none"> <li>• Blood in the airway</li> <li>• Facial deformities</li> <li>• Colour change below the eyes</li> <li>• Inflammation of the jaw or limited motion</li> <li>• Teeth that do not meet normally</li> <li>• Pain or numbness in the face</li> <li>• Loose or broken teeth</li> <li>• Swelling</li> <li>• Any indication of a severe blow to the face (contusions or bruising)</li> </ul> <p><b>Pre-hospital treatment for facial fractures</b> (The same as for soft tissue injuries.) Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Ensure open airway.</li> <li>2) Control bleeding.</li> <li>3) Bandage open wounds.</li> <li>4) Monitor vital signs.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
SL 12-8	<p>5) Treat for shock.</p> <h2>2.5 Spinal Injuries</h2> <h3>Signs and symptoms</h3> <ul style="list-style-type: none"> <li>• Numbness, tingling sensation in the arms or legs</li> <li>• Paralysis of the arms or legs</li> <li>• Pain during movement of the arms and legs</li> <li>• Sensitivity or pain along the later part of the neck or the back</li> <li>• Deformity of the head or neck</li> <li>• Head injury or haematomas in the shoulders, back or the patient's sides</li> <li>• Loss of bowel or bladder control</li> <li>• Difficulty breathing with little or no chest movement</li> <li>• The patient may be found supine with arms extended above the head (also known as posturing), which may indicate damage in the cervical region</li> <li>• Priapism (persistent erection of the penis)</li> </ul> <h3>Determining possible spinal injury</h3> <p>1) <b>Conscious Patient</b></p> <ul style="list-style-type: none"> <li>• Ask what happened. Ask the patient how he/she is feeling. Ask the patient to move his/her hands or feet.</li> <li>• Observe for haematomas, lacerations and deformities.</li> <li>• Feel (palpate) for sensitive areas, deformities.</li> </ul> <p>Signs of spinal injury may not be apparent. However, that does <u>not</u> rule out spinal injury.</p> <p>2) <b>Unconscious Patient</b></p> <ul style="list-style-type: none"> <li>• Observe for cuts, haematomas, and deformities.</li> <li>• Feel for deformities and injuries.</li> <li>• Ask others: What happened and how?</li> </ul> <h3>Complications</h3> <ul style="list-style-type: none"> <li>• Respiratory arrest. Caused by paralysis of the thoracic muscles. Breathing can be accomplished only by the diaphragm, and paralysis of the thoracic muscles can severely reduce or compromise breathing.</li> <li>• Neurological injury can affect the diameter of the blood vessels, thereby producing shock (neurogenic shock).</li> <li>• General paralysis.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>SL 12-9 SL 12-10 SL 12-11 SL 12-12 SL 12-13 SL 12-14</p> <p>NOTE</p>	<p><b>Pre-hospital treatment for spinal injury</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Determine the mechanism of injury.</li> <li>2) Provide <b>manual in-line neutral stabilisation</b> of the head and neck upon first contact with the patient.</li> <li>3) <b>Conduct initial assessment.</b> Consider any unconscious patient a trauma victim with possible neck or spinal injury until proven otherwise.</li> <li>4) <b>Administer oxygen</b> per local protocol.</li> <li>5) <b>Perform physical exam</b> and provide treatment.</li> <li>6) <b>Maintain manual stabilisation</b> until patient is completely immobilised.</li> <li>7) <b>Continually monitor vital signs</b> during transport.</li> </ol> <p><b>2.6 Chest Injuries</b></p> <p><b>&lt;Briefly review chest anatomy.&gt;</b></p> <p><b>Methods of injury</b></p> <ul style="list-style-type: none"> <li>• <b>Blunt trauma</b>—usually results in closed injury; chest cavity is not penetrated. Can be associated with severe injury. A <b>compression injury</b> is a form of blunt trauma in which the chest is rapidly compressed.</li> <li>• <b>Penetrating injury</b>—open injury; chest cavity is penetrated.</li> </ul> <p><b>Signs and symptoms of chest injury</b></p> <ul style="list-style-type: none"> <li>• Tenderness/pain at the injury site</li> <li>• Chest deformity, coughing blood</li> <li>• Shallow breathing with possible crackling sensation near site</li> <li>• Increased pain during breathing</li> <li>• Patient's posture toward the side of the fracture or injury</li> <li>• Extensive, visible bruising to the chest</li> <li>• Grating (crepitus) upon palpation</li> <li>• Subcutaneous emphysema</li> <li>• Distended neck veins, bloodshot eyes, cyanotic tongue and lips, swollen upper torso</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b><u>Rib Fractures</u></b></p> <p><b>Pre-hospital treatment for rib fractures</b></p> <p>Use universal precautions and secure the scene. <b>Your first priority is to ensure patient can breathe adequately.</b></p> <ol style="list-style-type: none"> <li>1) Apply a sling and swathe to hold the patient's arm against the injured side of the chest. Give the patient a pillow or blanket to hold against the ribs for support.</li> <li>2) If alert, allow the patient to assume a comfortable position.</li> </ol> <p><b>&lt;Do not use any methods that fully encircle the chest.&gt;</b></p> <p><b><u>Flail Chest</u></b></p> <p>Flail chest is a closed chest injury causing the chest wall to become unstable, due to fractures of the sternum, cartilage connecting the ribs to the sternum or fractured ribs (the chest between the fractures becomes unstable).</p> <p><b>Pre-hospital treatment for flail chest</b></p> <p>Use universal precautions, secure scene and alert EMS.</p> <ol style="list-style-type: none"> <li>1) Locate the flailed section of the chest by carefully feeling the injured site.</li> <li>2) Stabilise flail chest by applying a <b>pillow</b> or <b>bulky dressing</b>. You can also use a small object as a weight (less than 2 kg.)</li> <li>3) Use adhesive tape to secure the bulky dressing. If no tape is available, use your hand to secure the injured site.</li> </ol> <p><b><u>Penetrating Wounds</u></b></p> <ul style="list-style-type: none"> <li>• Penetrating chest injuries are open chest wounds in which the chest wall is torn, typically by a foreign object. Look for possible exit wound (perforating injury).</li> <li>• Chest injuries: A penetrating chest wound can prevent a patient from breathing adequately. These wounds are called <b><u>"sucking chest wounds"</u></b> because they produce a sucking sound every time the patient breathes. In this case, apply an <b>occlusive dressing</b>, leaving an open side as a relief valve. This type of dressing is used to form an <b>airtight seal</b>.</li> </ul> <p><b>&lt;SHOW OCCLUSIVE DRESSING (e.g., sheets of plastic)&gt;</b></p>	
SL 12-15 SL 12-16 SL 12-17		
SL 12-18 SL 12-19 SL 12-20		
NOTE		



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>SL 12-21 through SL 12-27</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<p><b><u>Impaled Objects</u></b></p> <p>As recommended in a previous lesson, an impaled object should always be fixed in its place, unless it is located in the patient's cheek, or if it interferes with airway management or CPR. It should be stabilised with bulky dressing and adhesive tape to secure the dressing in place.</p> <p><b><u>Injuries to the Heart and Lungs</u></b></p> <p><b>&lt;Ask participants for possible methods of injury.&gt;</b></p> <ul style="list-style-type: none"> <li>• A collapsed lung may be caused by <b><u>air escaping the lung</u></b> due to injury or by <b><u>blood accumulation</u></b> in the chest cavity.</li> <li>• The blood in the cavity of the pericardium (the serous membrane that encloses the heart) can cause the heart to collapse.</li> </ul> <p><b>&lt;ALL THE ABOVE INJURIES ARE SERIOUS EMERGENCIES AND REQUIRE IMMEDIATE TRANSPORT.&gt;</b></p> <hr/> <p><b><i>III. PRACTICAL EXERCISE</i></b></p> <p>Working in groups of three and assisted by the instructors, the students will practice the handling of:</p> <ul style="list-style-type: none"> <li>• Penetrating wounds and impaled object in the chest</li> <li>• Rib fractures and flail chest</li> <li>• Demonstration and practice of placing the cervical collar</li> </ul> <hr/> <p><b><i>IV. REVIEW</i></b></p> <ol style="list-style-type: none"> <li>1. Review lesson objectives.</li> </ol> <hr/> <p><b><i>IV. EVALUATION</i></b></p> <ol style="list-style-type: none"> <li>1. Objectives 4 and 5 should be achieved in the practice.</li> <li>2. Allow participants 10-15 minutes to complete the Post-Test.</li> </ol> <hr/> <p><b><i>V. CLOSING</i></b></p> <ol style="list-style-type: none"> <li>1. Allow for comments and suggestions.</li> <li>2. Announce the following lesson and thank the participants.</li> </ol>	





## **Practical Exercises**

### **Injuries to the Skull, Spinal Column and Chest**

**Station 1: Treating penetrating and impaled chest injuries**

**Station 2: Treating rib fractures and flail chest injuries**

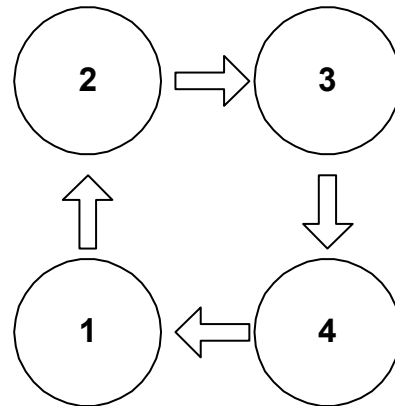
**Station 3: Treatment of cervical spine injuries using a cervical collar**

**Station 4: Treatment of cervical spine injuries using a backboard**

**Rotation procedure for this lesson:**

**Number of rotations: 4**

**Duration: 3 hours (45 minutes per station)**



Allot sufficient time for each station. Set up participants in pairs. One will act as the patient and the other rescuer; then exchange places.

**<NOTE: Briefly explain what is expected in each station from the participant, then allow practise to begin. The participant in charge of each station will supervise the performance of the other two participants.>**

**<Don't spend time covering material already given in class. Allow the participants to practise as much as possible.>**



## **Practical Exercises (cont'd.)**

### **Injuries to the Skull, Spinal Column and Chest**

#### **Station 1: Treatment of penetrating and impaled chest injuries**

##### **Materials:**

- PPE for each participant
- 1 package of dressings or 24 sanitary towels
- 3 rolls of 1-inch tape
- 4 sheets of thick plastic measuring 30 cm. x 30 cm. (occlusive dressing)
- 3 pencils or a similar item to simulate an impaled object
- Instructor evaluation form (Skills Checklist)

In this station, participants will take turns playing the role of the patient and rescuer. Arrival protocols are only mentioned not used. Perform initial assessment and physical exam. The following procedures should be completed:

- Treatment of penetrating chest injury/sucking chest wound
- Treatment of impaled object chest injury

#### **Station 2: Treatment of rib fractures and flail chest injuries**

##### **Materials:**

- PPE for each participant
- 12 triangular bandages
- 3 rolls of 2-inch tape
- 4 dressings swollen or enough simple dressings
- Instructor evaluation form (Skills Checklist)

In this station, participants will take turns playing the role of the patient and rescuer. Arrival protocols are only mentioned not used. Perform initial assessment and physical exam. The following procedures should be completed:

- Treatment of rib fracture
- Treatment of chest injury



## **Practical Exercises (cont'd.)**

### **Injuries to the Skull, Spinal Column and Chest**

#### **Station 3: Treatment of cervical spine injuries using a cervical collar**

##### **Materials:**

- PPE for each participant
- Sets of cervical collars
- Instructor evaluation form (Skills Checklist)

In this station, participants will take turns playing the role of the patient and rescuer. Arrival protocols are only mentioned verbally, not performed. Perform initial assessment and placement of cervical collar. The following are the steps to be taken:

- 1) Arrival at the scene (verbal)
- 2) Initial assessment (perform)
- 3) Administer oxygen (verbal)
- 4) Suspect spinal injury (verbal)
- 5) Placement of cervical collar (perform)
- 6) Secondary evaluation (verbal)
- 7) Dress any trauma (verbal)
- 8) Maintain patient in resting position (verbal)
- 9) Immobilise patient (verbal)
- 10) Prevent or treat for shock (verbal)
- 11) Monitor vital signs (verbal)

#### **Station 4: Treatment of cervical spine injuries using a backboard**

##### **Materials:**

- PPE for each participant
- 3 backboards
- 3 blanket rolls
- Instructor evaluation form (Skills Checklist)

In this station, participants will take turns playing the role of the patient and rescuer. Arrival protocols are only mentioned verbally, not performed. The following procedures should be completed:

**<At this station, the participants will only place the patient on the backboard. Securing the patient to the backboard will be covered in Lesson 19.>**

- 1) Place patient on backboard from a supine position.
- 2) Place patient on backboard and from a prone position.



## MFR Lesson 12 Skills Checklist

### Stations 1, 2, 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b>	Use PPE					
	Treat penetrating and sucking chest wound					
	Treat impaled object to the chest					
<b>Station 2</b>	Use PPE					
	Treat a rib fracture					
	Treat flail chest					
<b>Station 3</b>	Use PPE					
	Place cervical collar on a sitting patient					
	Place cervical collar on a supine patient					
<b>Station 4</b>	Use of PPE					
	Place patient on backboard from supine position					
	Place patient on backboard from prone position					
	Place patient on backboard from standing position					

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:

Comments: \_\_\_\_\_

\_\_\_\_\_

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## **Lesson 12**

### **Post-Test**

# **Injuries to the Skull, Spinal Column and Chest**

1. List five signs or symptoms of a skull fracture:

- *Altered mental status, ranging from confusion to unresponsiveness*
- *Pain or inflammation in the place of the injury*
- *Deep cut laceration or haematoma in the scalp or forehead*
- *Softness or depression of the skull*
- *Facial bruising*
- *Bruising behind the ears, or “Battle’s Sign”*
- *Bruising around the eyes, or “raccoon eyes”*
- *One or both eyes appear sunken*
- *Unequal pupil size, one eye sunken*
- *Headache, disabling in severity or appearing suddenly*
- *Blood or cerebrospinal fluid leaking from the ears or nose*
- *Deterioration of vital signs*
- *Nausea and vomiting*

2. List six signs or symptoms of injury to the spine:

- *Numbness, tingling sensation in the arms or legs*
- *Paralysis of the arms or legs*
- *Pain during movement of the arms and legs*
- *Sensitivity or pain along the posterior of the neck or the back*
- *Deformity, to the head or neck*
- *Head injury or haematomas in the shoulders, back or the patient’s sides*
- *Loss of bowel or bladder control*
- *Difficulty breathing with little or no chest movement*
- *Position of the arms above the head (also known as posturing)*
- *The patient may be found on his back with their arms extended above the head, which can indicate damage in the cervical region*
- *Priapism (persistent erection of the penis)*

3. List five signs and symptoms of chest injuries:

- *Tenderness/pain at the injury site*
- *Chest deformity / coughing blood*
- *Shallow breathing with possible crackling sensation near site*
- *Increased pain during breathing*
- *Patient's posture toward the side of the fracture or injury when attempting to splint*

1

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## Lesson 12 Station 1

### Penetrating and sucking chest wounds

1. Assess patient's breathing.
2. Administer oxygen if needed.
3. Expose wound area and seal with a gloved hand initially.
4. Apply occlusive dressing (5 cm wider than the wound) to the wound.
5. Seal dressing on four sides.
6. If flutter valve is needed, unseal one corner.

RM p. 326-327

Rev. Feb 2002 FC 12-1

2

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## Lesson 12 Station 1

### Impaled object to the chest

1. Assess patient's breathing
2. Administer oxygen if needed.
3. Manually stabilise the object.
4. Expose the area around the wound.
5. Apply direct pressure to the edges of the wound to control bleeding, if needed.
6. Use bulky dressing to stabilise object.
7. Apply a rolled gauze bandage or elastic bandage to secure the bulky dressing and impaled object.

RM p. 307, 328

Rev. Feb 2002 FC 12-2

3

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## Lesson 12 Station 2

### Rib fracture

1. Assess patient's breathing.
2. Administer oxygen if needed.
3. Option 1: Apply a sling and swath (to hold patient's arm against the injured side).

Option 2: Give patient pillow or blanket to hold against the injured side.

### Flail chest

1. Assess patient's breathing.
2. Administer oxygen if needed.
3. Expose patient's chest.
4. Stabilise the flailed section with a bulky dressing, then tape it in place.

RM p. 323-324

Rev. Feb 2002 FC 12-3

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## Lesson 12 Station 3

### Cervical spine injury (cervical collar)

*The steps below will be performed with a patient in a sitting position and a supine position.*

### Sitting and Supine Patient

1. Maintain manual stabilisation.
2. Size and select the correct collar.
3. Slide the posterior portion of the collar behind the patient's neck.
4. Place the anterior portion of the collar under the patient's chin.
5. Fasten the collar in place.

RM p. 389-390

Rev. Feb 2002 FC 12-4

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## **Lesson 12**

### **Station 4**

#### **Cervical spine injury (using a backboard)**

#### **Supine Patient (5 Rescuers)**

1. Rescuer 1 maintains manual stabilisation throughout the procedure.
2. Rescuers 2, 3 and 4 gently roll the patient on his/her side.
3. Rescuer 5 moves the backboard into position.
4. Rescuers 2, 3, 4 and 5 gently lower the patient and the backboard to the ground.

RM p. 389-392

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Rev. Feb 2002 FC 12-5

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## **Lesson 12**

### **Station 4**

#### **Cervical spine injury (using a backboard)**

#### **Prone Patient (5 Rescuers)**

1. Rescuer 1 maintains manual stabilisation throughout the procedure (rescuer must cross his/her arms to roll the patient).
2. Rescuers 2, 3 and 4 gently roll the patient on his/her side.
3. Rescuer 5 moves the backboard into position.
4. Rescuers 2, 3, 4 and 5 gently lower the patient and the backboard to the ground.

RM p. 415

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Rev. Feb 2002 FC 12-6

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## **Lesson 12**

### **Station 4**

#### **Cervical spine injury (using a backboard)**

#### **Standing Patient (5 Rescuers)**

1. Rescuer 1 stands behind the patient and maintains manual stabilisation throughout the procedure.
2. Rescuers 2 places the cervical collar on the patient.
3. Rescuer 3 moves the backboard into position between Rescuer 1 and the patient.
4. Rescuers 4 and 5 grab the backboard under the patient's arms.
5. Rescuers 2 and 3 grab the backboard along the patient's hips and legs.
6. All rescuers gently lower the backboard and patient to the ground.

Rev. Feb 2002

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FC 12-7

1

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## Lesson 12 Objectives

1. List five signs and symptoms of a skull fracture.
2. List six signs and symptoms of a spinal injury.
3. List five signs and symptoms of chest injuries.

*more...*

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2

Medical First Responder Course

...cont'd.

## Lesson 12 Objectives


4. Demonstrate the procedures for the evaluation and pre-hospital treatment of injuries to the skull and spine.
5. Demonstrate the procedures for the evaluation and pre-hospital treatment of rib fractures, flail chest and penetrating chest injuries.

Rev. Feb.2002 TR 12-2

3

Medical First Responder Course

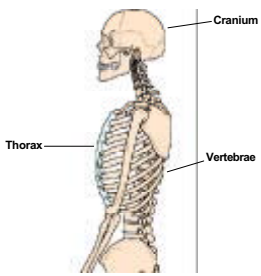
## Skeletal System



Rev. Feb.2002 TR 12-3

4


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Rev. Feb.2002 TR 12-4

5

Medical First Responder Course



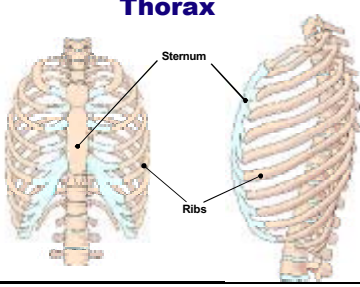
Spinal Column

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Medical First Responder Course

## Thorax



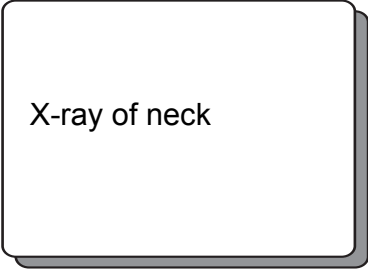
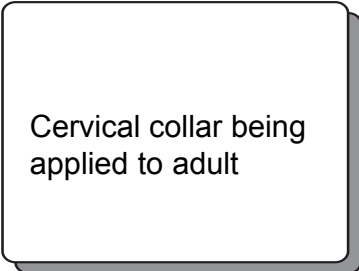
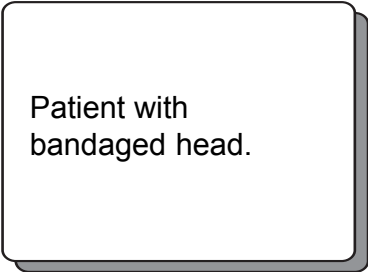
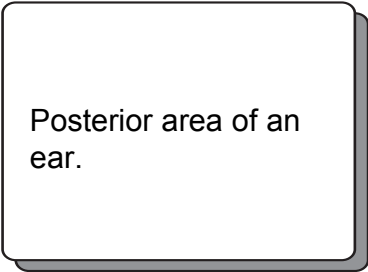
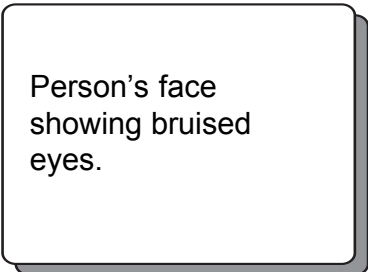
Rev. Feb.2002 TR 12-6



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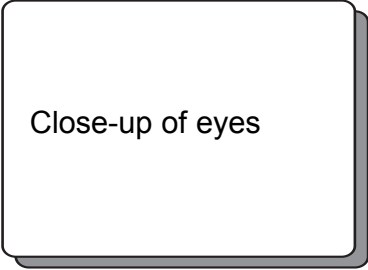
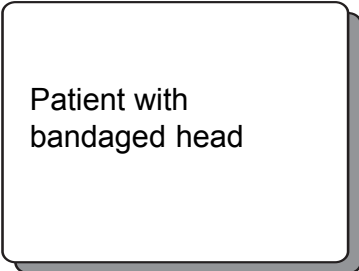
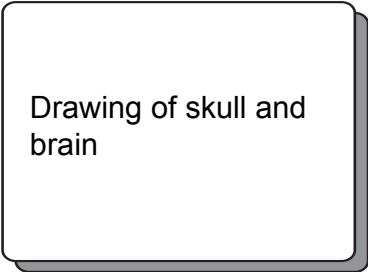
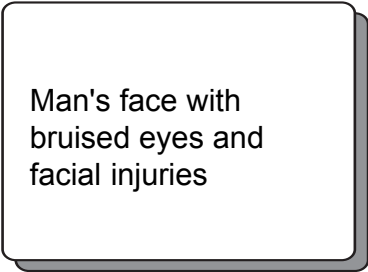
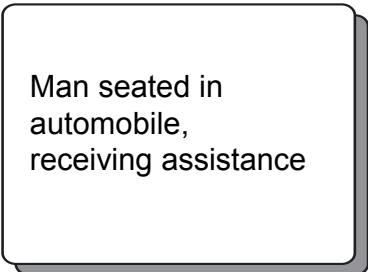
**SLIDE PROGRAMME GUIDE**  
**LESSON 12: Injuries to the Skull, Spine and Chest**

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Slide Name	Slide Number and Description
	<b>SL 12-1</b>  Fractured vertebra damaging the spinal cord.
	<b>SL 12-2</b>  Patient with suspected spinal injury; immobilisation initiated using a cervical collar.
	<b>SL 12-3</b>  Skull fracture, with loss of cerebrospinal fluid through the ear.
	<b>SL 12-4</b>  Haematoma behind the ear – sign of skull fracture (Battle's Sign).
	<b>SL 12-5</b>  Bruised eyes – sign of skull fracture.

## **SLIDE PROGRAMME GUIDE**

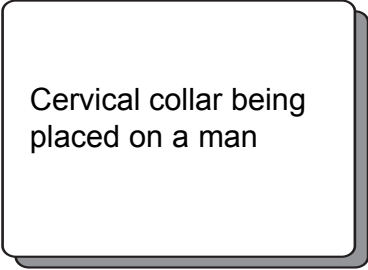
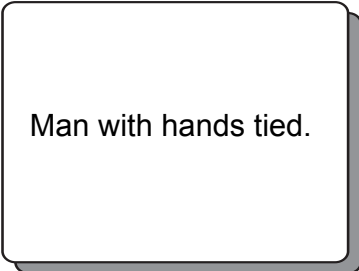
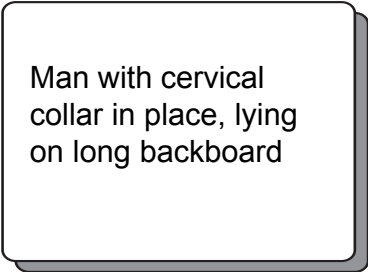
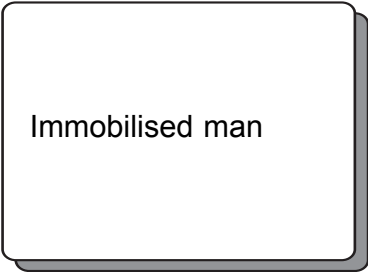
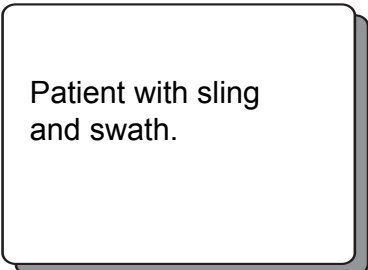
### **LESSON 12: Injuries to the Skull, Spine and Chest**

<b>Slide Name</b>	<b>Slide Number and Description</b>
	<b>SL 12-6</b>  Unequal pupil sizes – sign of skull fracture
	<b>SL 12-7</b>  Skull fracture, causing loss of cerebrospinal fluid through ear.
	<b>SL 12-8</b>  Brain injury due to internal bleeding caused by a blow to the head.
	<b>SL 12-9</b>  Possible facial and skull fractures. In an unconscious patient, blood in the airways is the greatest danger.
	<b>SL 12-10</b>  Facial or head trauma, neck pain, or angulation of the head or neck are signs of probable spinal

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**SLIDE PROGRAMME GUIDE**  
**LESSON 12: Injuries to the Skull, Spine and Chest**

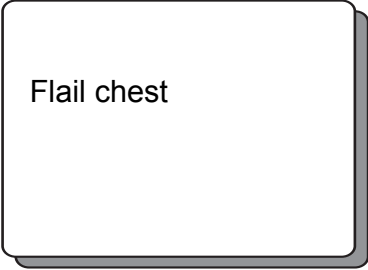
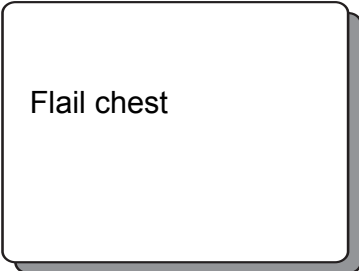
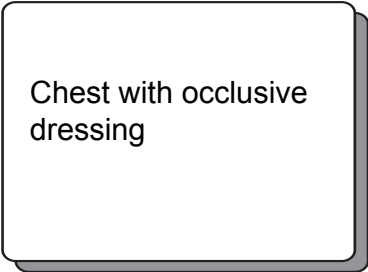
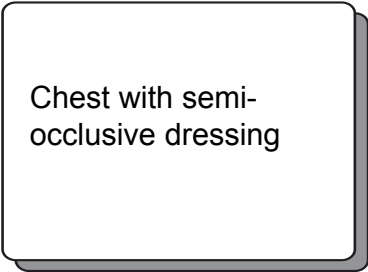
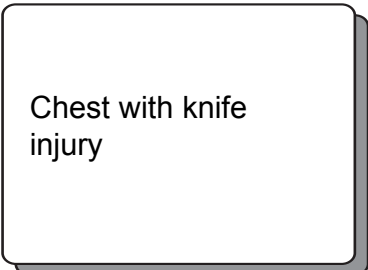
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Slide Name	Slide Number and Description
	<b>SL 12-11</b>  Patient with probable spinal injury – immobilisation initiated using a cervical collar.
	<b>SL 12-12</b>  Immobilising a patient includes tying hands to prevent any movement of the upper extremities.
	<b>SL 12-13</b>  Man's immobilised head is being secured to the long backboard using adhesive tape.
	<b>SL 12-14</b>  Immobilised patient on backboard.
	<b>SL 12-15</b>  Pre-hospital treatment for rib fracture.

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**SLIDE PROGRAMME GUIDE**  
**LESSON 12: Injuries to the Skull, Spine and Chest**

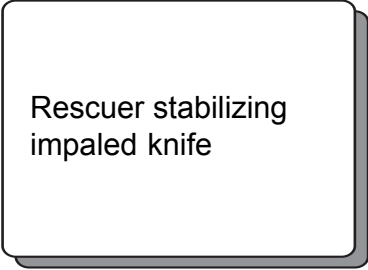
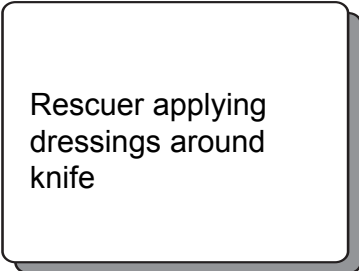
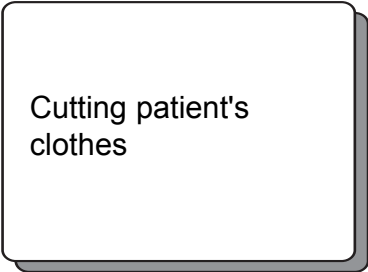
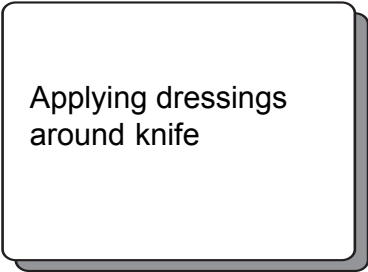
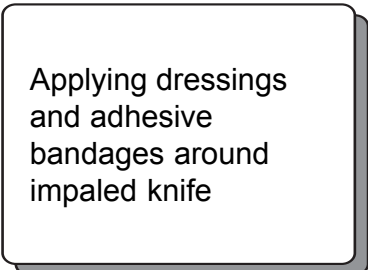
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Slide Name	Slide Number and Description
 <p>Flail chest</p>	<p><b>SL 12-16</b></p> <p>Drawing on male chest illustrating detached sternum.</p>
 <p>Flail chest</p>	<p><b>SL 12-17</b></p> <p>Pre-hospital treatment using sandbags to splint flail chest injury.</p>
 <p>Chest with occlusive dressing</p>	<p><b>SL 12-18</b></p> <p>Occlusive dressing applied to chest wall.</p>
 <p>Chest with semi-occlusive dressing</p>	<p><b>SL 12-19</b></p> <p>Rescuer stabilising impaled knife.</p>
 <p>Chest with knife injury</p>	<p><b>SL 12-20</b></p> <p>Penetrating wound to the abdomen with impaled knife.</p>

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**SLIDE PROGRAMME GUIDE**  
**LESSON 12: Injuries to the Skull, Spine and Chest**

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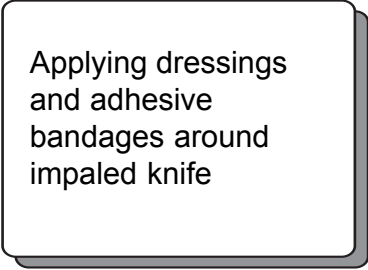

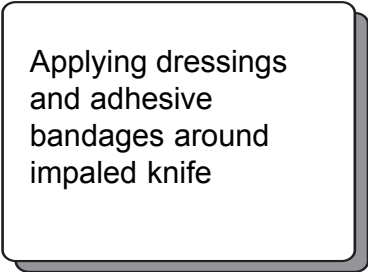
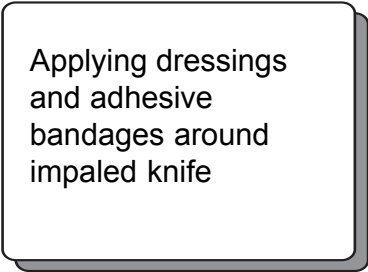
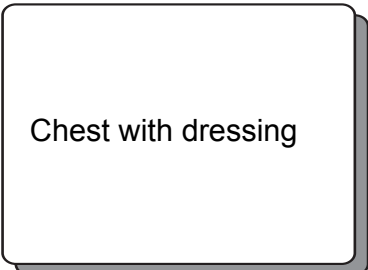
Slide Name	Slide Number and Description
 <p>Rescuer stabilizing impaled knife</p>	<p><b>SL 12-21</b></p> <p>Rescuer stabilising impaled knife.</p>
 <p>Rescuer applying dressings around knife</p>	<p><b>SL 12-22</b></p> <p>Rescuer applying dressings to immobilise impaled knife.</p>
 <p>Cutting patient's clothes</p>	<p><b>SL 12-23</b></p> <p>Rescuer exposing patient's chest and abdomen.</p>
 <p>Applying dressings around knife</p>	<p><b>SL 12-24</b></p> <p>Rescuer applying dressings to immobilize impaled knife</p>
 <p>Applying dressings and adhesive bandages around impaled knife</p>	<p><b>SL 12-25</b></p> <p>Rescuer applying dressings and adhesive bandages to immobilise impaled knife</p>

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## **SLIDE PROGRAMME GUIDE**

### **LESSON 12: Injuries to the Skull, Spine and Chest**

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<b>Slide Name</b>	<b>Slide Number and Description</b>
	<b>SL 12-26</b>  Rescuer applying dressings and adhesive bandages to immobilise impaled knife
	<b>SL 12-27</b>  Rescuer applying dressings and adhesive bandages to immobilise impaled knife
	<b>SL 12-28</b>  Rescuer applying dressings and adhesive bandages to immobilise impaled knife
	<b>SL 12-29</b>  Rescuer applying dressings and adhesive bandages to immobilise impaled knife
	<b>SL 12-30</b>  Rescuer covers injury with occlusive dressing.



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## Medical First Responder Course

# Lesson Plan 13

## Burns and Environmental Emergencies

**Approximate Duration:** 2 hours

**Materials:**

- Transparencies
- Flipcharts
- Slides
- Slide programme
- Handout

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Match the signs and symptoms for each of the three types of burns according to their depth.
2. Apply the “Rule of Nines” to determine the Total Body Surface Area (TBSA) burnt on a patient when given a specific part of the body.
3. List three steps for pre-hospital treatment of chemical burns.
4. List three steps for pre-hospital treatment of electrical burns.
5. List three signs and symptoms of heat cramps, heat exhaustion and heat stroke and list all pre-hospital treatment steps for each.
6. List three signs and symptoms of both mild and severe hypothermia and list six steps for pre-hospital treatment.
7. List three signs and symptoms of frostbite and three steps for pre-hospital treatment.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 13-1 TR 13-2 TR 13-3</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduction of instructor and the assistant.</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives (have the participants read from WB).</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Burns</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Injuries caused by exposure to excessive heat from thermal, chemical, electrical or radiation.</p> </div> <p><b>&lt;Review layers and functions of the skin.&gt;</b></p> <p>Burns can injure the skin, muscles, blood vessels, nerves and bones. The eyes, ears and the respiratory system can also be affected. Apart from the physical damage, the victim suffers psychologically and emotionally.</p> <p><b>1.1 Causes of Burns</b></p> <ol style="list-style-type: none"> <li>1) <b>Thermal:</b> heat (fire, vapour and hot objects), and cold (freezing and frozen objects).</li> <li>2) <b>Chemical:</b> includes several caustics such as acids and alkalis.</li> <li>3) <b>Electrical:</b> electricity, i.e., house current, lightning.</li> <li>4) <b>Radiant:</b> ultraviolet rays (including sunlight) and radioactive agents.</li> </ol> <p><b>1.2 Classification, Signs and Symptoms of Burns</b></p> <p><b><u>Classification by Depth</u></b></p> <p>Burns are classified by depth: superficial, partial thickness and full-thickness.</p> <ul style="list-style-type: none"> <li>• <b>Superficial (first-degree) burns:</b> These involve only the top layer of skin (epidermis). <i>There is a reddening of the skin and some pain and swelling of the area.</i></li> </ul>	
<p>TR 13-5</p>		





Visual Aids and Other Materials	CONTENT	Time Elapsed																								
<p>FC 13-1 FC 13-2</p> <p>TR 13-6</p>	<ul style="list-style-type: none"> <li>• <b>Partial thickness (second-degree) burns:</b> The superficial layer of skin is burned through and the second layer is damaged. This type of burn is painful. There will be swelling and blistering, skin may appear white or red, may be moist and mottled.</li> <li>• <b>Full thickness (third-degree) burns:</b> All the layers of the skin are burnt, including the fatty layer, muscles, blood vessels and nerves, and in some cases the bone. This type is the most serious of all burns and is characterised by the following: <ul style="list-style-type: none"> <li>– Skin is usually dry, hard, pale or white but it can be brown or scorched.</li> <li>– May be accompanied by a loss of the sensitivity in the area affected due to destruction of nerves. Possible pain around periphery of burn area.</li> <li>– First-degree or second-degree can be very painful burns, but with third-degree burns most of the nerve endings have been damaged. Skin may feel hard to the touch.</li> </ul> </li> </ul> <p><b><u>Extent of Body Surface Burned</u></b></p> <p>The “<b>Rule of Nines</b>” is a standardised way of estimating the amount of body surface area (BSA) burned: The body is divided into regions for estimating body surface areas as follows:</p> <table> <thead> <tr> <th></th><th><u>Adult</u></th><th><u>Child</u></th></tr> </thead> <tbody> <tr> <td>Head and Neck .....</td><td>9%</td><td>18%</td></tr> <tr> <td>Upper extremities .....</td><td>each 9%</td><td>each 9%</td></tr> <tr> <td>Anterior trunk .....</td><td>18%</td><td>18%</td></tr> <tr> <td>Posterior trunk .....</td><td>18%</td><td>18%</td></tr> <tr> <td>Genital .....</td><td>1%</td><td>incl. in ant. trunk</td></tr> <tr> <td>Lower extremities .....</td><td>each 18%</td><td>each 14%</td></tr> <tr> <td><b>TOTAL:</b></td><td><b>100%</b></td><td><b>100%</b></td></tr> </tbody> </table> <p><b>&lt;Not necessary to spend too much time determining a burn’s exact BSA. Slight differences will not affect treatment.&gt;</b></p>		<u>Adult</u>	<u>Child</u>	Head and Neck .....	9%	18%	Upper extremities .....	each 9%	each 9%	Anterior trunk .....	18%	18%	Posterior trunk .....	18%	18%	Genital .....	1%	incl. in ant. trunk	Lower extremities .....	each 18%	each 14%	<b>TOTAL:</b>	<b>100%</b>	<b>100%</b>	
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<b>TOTAL:</b>	<b>100%</b>	<b>100%</b>																								



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 13-3	<p><b>1.3 Burn Severity</b></p> <p>The two primary factors considered in rating burn severity are <b>body surface area (BSA)</b> and <b>location</b>. Burn severity can be rated as follows:</p> <p><b>Minor Burns</b></p> <ul style="list-style-type: none"> <li>• Full-thickness burns of less than 2% BSA, excluding face, hands, feet, genitalia, or respiratory tract</li> <li>• Partial thickness burns of less than 15% BSA.</li> <li>• Superficial burns of 50% BSA or less.</li> </ul> <p><b>Moderate Burns</b></p> <ul style="list-style-type: none"> <li>• Full-thickness burns of 2% to 10% BSA, excluding face, hands, feet, genitalia, or respiratory tract</li> <li>• Partial thickness burns of 15% to 30% BSA.</li> <li>• Superficial burns over 50% BSA</li> </ul> <p><b>Critical Burns</b></p> <ul style="list-style-type: none"> <li>• All burns complicated by injuries of the respiratory tract, other soft-tissue injuries, and injuries of the bones.</li> <li>• Partial- or full-thickness burns involving the face, hands, feet, genitalia, or respiratory tract.</li> <li>• Full-thickness burns of more than 10% BSA.</li> <li>• Partial-thickness burns of more than 30% BSA.</li> <li>• Burns complicated by musculoskeletal injuries.</li> <li>• Circumferential burns.</li> </ul> <p><b>Additional Considerations</b></p> <ul style="list-style-type: none"> <li>• <b>Source of the burn:</b> <ul style="list-style-type: none"> <li>– <b>Electrical</b> burns can cause small surface injury while causing severe internal damage.</li> <li>– <b>Chemical</b> burns are of special concern, as chemicals may remain on the skin and continue burning for an extended period and/or enter the bloodstream.</li> </ul> </li> <li>• <b>Body regions burned</b> <ul style="list-style-type: none"> <li>– Face:</li> <li>– Hands and feet:</li> <li>– Groin, genitalia, buttocks and inner thighs:</li> <li>– Burns around joints:</li> </ul> </li> <li>• <b>Other complicating factors:</b> <ul style="list-style-type: none"> <li>– Patient's age.</li> <li>– Patient's pre-existing illnesses.</li> </ul> </li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>NOTE</b></p> <p><b>NOTE</b></p>	<p><b>&lt;Burns which by the above classification are moderate, should be considered critical in a patient less than 5 or more than 55 years of age.&gt;</b></p> <p><b>1.4 Pre-hospital Treatment For Burns</b></p> <p>Use universal precautions, secure the scene and alert EMS.</p> <ol style="list-style-type: none"> <li>1) Stop the burning process. Run cold water over the scald burns. Flush away chemicals with water for 20 minutes or more.</li> <li>2) Remove any smouldering clothing and jewellery. If you meet resistance or if you see pieces melted into the skin, cut around the area. Do not try to remove them.</li> <li>3) Perform initial assessment.</li> </ol> <p><b>&lt;Most victims die from blocked airway, inhaled toxins or other trauma rather than from the burn itself. Treat life-threatening injuries.&gt;</b></p> <ol style="list-style-type: none"> <li>4) Administer oxygen per local protocol. If your patient's breathing is inadequate, provide ventilation with supplemental oxygen.</li> <li>5) Determine the severity of burns, using the rule of nines.</li> <li>6) Cover the burns. Use dry sterile dressings or a disposable sterile burn sheet. Do not use grease or fat, ointment, lotion, antiseptic, or ice on the burns. Do not break any blisters. If a burn involves the eye, be sure to cover both eyes. Fingers with second- or third-degree burns require dressing each finger individually.</li> </ol> <p><b>&lt;Follow local protocols for the use of wet dressings.&gt;</b></p> <ol style="list-style-type: none"> <li>7) Keep the patient warm and treat for shock.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<p><b>1.5 Pre-hospital Treatment for Chemical Burns</b></p> <p><b>&lt;Rapid treatment is essential. Below are general guidelines only.&gt;</b></p> <p><b>CAUTION:</b> If patient is contaminated, wash off the person from a distance to avoid exposing yourself to the chemicals.</p> <p>Use universal precautions, secure the scene and alert EMS.</p> <ol style="list-style-type: none"><li>1) Brush off dry chemicals, such as lime powder, before flushing with water.</li><li>2) Rinse the area with water for at least 20 minutes or more. Remove and set aside clothes and jewellery while the patient is being washed off.</li><li>3) Apply a sterile dressing to the affected area.</li><li>4) Treat for shock.</li></ol> <p><b>1.6 Pre-hospital Treatment for Chemical Burns to the Eyes</b></p> <p>Rinse the eyes immediately with water for at least 20 minutes. Maintain a flow of water on the affected eye from a faucet (low pressure), bottle, glass or other source. Keep the patient's eyelid(s) open.</p> <p><b>1.7 Pre-hospital Treatment for Electrical Burns</b></p> <p>The more serious problems related to electrical burns are respiratory and/or cardiac arrest, damage to the nervous system and injury to internal organs. Follow local protocols. Use universal precautions, secure the scene and alert EMS.</p> <div><p><b>Prolonged CPR should be performed on electrical injury victims as they can remain viable for a longer period than with other types of injuries.</b></p></div> <p>Care for electrical burns the same as any other type of burn, also using the following specific guidelines for electrical burns.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 13-7</p> <p>TR 13-8</p>	<ol style="list-style-type: none"> <li>1) Perform initial assessment. <i>The electrical current passing through the body often causes cardiac arrest. Partial airway obstruction can also be present due to inflammation of airway tissues.</i></li> <li>2) Evaluate burns and look for at least two burn areas: <i>one will be in the place where the patient made contact with the energy source (often the hand). The other will be where the patient made contact to ground, where the electricity exited the body (often a foot or a hand).</i></li> <li>3) Apply a dry, sterile dressing to the burns.</li> <li>4) Treat for shock.</li> </ol> <p><b>1.8 Inhalation Injury</b></p> <p>This type of injury occurs when a patient inhales super heated air, smoke and/or toxic products. Symptoms for these injuries may appear mild initially, then become more severe.</p> <p><b>Signs and symptoms of inhalation injury</b></p> <ul style="list-style-type: none"> <li>• Singed nasal hair</li> <li>• Burns to the face</li> <li>• Specks of soot in the sputum</li> <li>• Sooty or smoky smell on the breath.</li> <li>• Respiratory distress</li> <li>• Hoarseness, cough, or difficulty speaking</li> <li>• Restricted chest movement</li> <li>• Cyanosis</li> </ul> <p><b>Pre-hospital treatment for inhalation injury</b></p> <ol style="list-style-type: none"> <li>1) Administer oxygen per local protocol.</li> <li>2) Monitor patient's airway and breathing.</li> <li>3) Be prepared to ventilate.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 13-9</p>	<h2>2. Environmental Emergencies</h2> <h3>2.1 Heat Exposure</h3> <p>The exposure to excessive heat can produce serious health conditions. There are three common emergencies brought about by exposure to excessive heat:</p> <ul style="list-style-type: none"> <li>• Heat cramps</li> <li>• Heat exhaustion</li> <li>• Heat stroke</li> </ul> <h4>Heat Cramps</h4> <p>Heat cramps consist of pains and muscle spasms that occur when the body loses a large quantity of <u>salt</u> through excessive sweating.</p> <h4>Signs and symptoms of heat cramps</h4> <ul style="list-style-type: none"> <li>• Severe muscle cramps, usually in the legs and abdomen.</li> <li>• Exhaustion</li> <li>• Nausea</li> <li>• Periods of fainting</li> </ul> <h4>Pre-hospital treatment for heat cramps</h4> <ol style="list-style-type: none"> <li>1) Move the patient to a cool area.</li> <li>2) Give the patient water. The muscle cramp should be alleviated after drinking water.</li> </ol> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p><b>The patient needs the water more than the salt, Do not delay giving water to look for salt. Commercial electrolytes or oral rehydration solution (ORS) can also be used.</b></p> </div> <h4>Heat Exhaustion</h4> <p>Heat exhaustion can occur when a person in poor physical condition exerts himself or herself during physical activity in a very hot environment, causing blood flow to be affected.</p> <p><b>&lt;Point out this risk in firefighting.&gt;</b></p>	

NOTE



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 13-10</p>	<p><b>Signs and symptoms of heat exhaustion</b></p> <ul style="list-style-type: none"> <li>• Rapid, shallow breathing</li> <li>• Weak pulse</li> <li>• Cold, clammy, pale skin and mucous membranes, with a lot of sweating</li> <li>• Weakness</li> <li>• Dizziness, sometimes leading to fainting</li> </ul> <p><b>Pre-hospital treatment for heat exhaustion</b></p> <ol style="list-style-type: none"> <li>1) Move the patient to a cool place to rest.</li> <li>2) Remove or loosen clothing as necessary to cool the patient without causing chills.</li> <li>3) Place the patient in a supine position with legs elevated 20 to 30 cm.</li> <li>4) Administer oxygen per local protocol.</li> <li>5) Give water, but not to an unconscious patient.</li> </ol> <p><b>Heat Stroke</b></p> <p>Heat stroke is a very serious life-threatening condition. The body becomes overheated and, in many cases, the patient stops sweating. If left untreated, brain cells will begin to die.</p> <p><b>Signs and symptoms</b></p> <ul style="list-style-type: none"> <li>• Deep, rapid breathing</li> <li>• Rapid, strong pulse followed by a rapid, weak pulse</li> <li>• Dry, hot skin, sometimes red</li> <li>• Dilated pupils</li> <li>• Loss of consciousness</li> <li>• Convulsions or muscular tremors</li> </ul>	
<p>TR 13-11</p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment for heat stroke</b></p> <p>Use universal precautions, secure the safety, and alert EMS.</p> <div><div>1)</div><div>Cool the patient quickly in any way possible. Move the patient far from the source of heat. Remove his or her garments and wrap the patient with wet sheets. Pour cold water on the sheets. This should normalise the patient’s core temperature and help prevent brain cells from dying.</div></div> <div><div>2)</div><div>Place cold bags or ice packs below each armpit, behind the knees and around the ankles, and one on each side of the neck.</div></div> <div><div>3)</div><div>Look for a large container or bathtub and submerge the patient in cold water up to the neck. Use ice to cool the water.</div></div>	

Heat Emergency Comparison Chart			
	Heat Cramps	Heat Exhaustion	Heat Stroke
Muscle cramps	YES	NO	NO
Sickness	YES	YES	YES
Breathing	Varies	Quick and superficial	Deep initially, later superficial
Pulse	Varies	Weak	Rapid and strong
Skin	No change	Cool, clammy and pale	Dry, hot and red
Loss of consciousness	Rarely	Sometimes	Frequently





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 13-12</p>	<h2>2.2 Cold Emergencies</h2> <p>Exposure to excessive cold can cause two kinds of emergencies:</p> <ul style="list-style-type: none"> <li>• Hypothermia</li> <li>• Frostbite or local cold injuries</li> </ul> <h3>Hypothermia</h3> <p>When cooling affects the entire body, this causes a condition known as hypothermia, or generalized cooling. Hypothermia can develop in temperatures well above freezing.</p> <h3>Signs and symptoms of mild hypothermia</h3> <ul style="list-style-type: none"> <li>• Chills</li> <li>• Drowsiness</li> <li>• Rapid breathing, slow pulse</li> <li>• Loss of vision</li> <li>• Sluggish pupils</li> <li>• Uncontrollable shivering</li> </ul> <h3>Signs and symptoms of severe hypothermia</h3> <ul style="list-style-type: none"> <li>• Extremely slow breathing rate</li> <li>• Extremely slow pulse rate</li> <li>• Unresponsiveness</li> <li>• Fixed and dilated pupils</li> <li>• Rigid extremities</li> <li>• Absence of shivering</li> </ul> <h3>Pre-hospital treatment for hypothermia</h3> <p>Handle patient very gently and offer comfort and reassurance. Use universal precautions, secure the scene, and alert EMS.</p> <ol style="list-style-type: none"> <li>1) Conduct initial assessment and physical exam.</li> <li>2) Remove the patient from the cold environment.</li> <li>3) Maintain open airway and administer oxygen per local protocol.</li> <li>4) Remove any wet clothing and cover patient with a blanket. Keep the patient dry.</li> <li>5) If the patient is alert, offer warm liquids (non-stimulant) slowly.</li> <li>6) Constantly assess vital signs.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<p><b>Frostbite or Local Cold Injuries</b></p> <p>This type of injury consists of the freezing or near-freezing of a body part. Usually the toes, fingers, face, nose, and ears are at most risk. Onset is slow, but can occur quickly under high-wind conditions.</p> <p><b>Signs and symptoms frostbite or local cold injuries</b></p> <ul style="list-style-type: none"> <li>• Loss of sensation to the affected area.</li> <li>• Affected area of skin becomes white and waxy. Dark skin will turn pale. This colour change can be very quick.</li> <li>• Sometimes the area becomes swollen, blistered, and white.</li> </ul> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Never rub or massage the affected area of a local cold injury. Ice crystals under the skin could damage the fragile capillaries and tissues, making the injury worse.</b></p> </div> <p><b>Pre-hospital treatment for frostbite/local cold injuries</b></p> <p>If you suspect hypothermia, treat that condition before treating for frostbite (“life before limb”). Use universal precautions, secure the scene and alert EMS.</p> <ol style="list-style-type: none"> <li>1) Remove the patient from the cold environment. Do not allow the patient to walk on a frozen limb.</li> <li>2) Protect the frozen area further injury and re-freezing. For an injured extremity, stabilise.</li> <li>3) Dry the affected area and apply a clean bandage. Place dressings between the fingers if they are affected. If superficial, cover and keep warm. If deep, apply dry, sterile dressings.</li> </ol> <p>If transport will be delayed, consider re-warming the affected area. Follow local protocol.</p> <p><b>&lt;Do not allow the patient to risk freezing any part of the body again.&gt;</b></p> <p><b>Late or Deep-Cold Injury</b></p> <p>Later stages of frostbite are referred to as late or deep-cold injury. In this condition, the skin may appear to be waxy and may be firm to the touch. As freezing continues, it becomes mottled and blotchy. Finally, the area becomes swollen, blistered and white. This type of injury can appear similar to partial thickness (second-degree) burns.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Signs and symptoms of late or deep-cold injury</b></p> <ul style="list-style-type: none"> <li>• Blotches in the skin (spotted). White colour appears first, then greyish yellow and finally greyish blue.</li> <li>• The surface of the skin will feel frozen in the affected area and the layers of skin below the surface will feel hard to the touch.</li> </ul> <p><b>Pre-hospital treatment for late or deep-cold injury</b></p> <p>Use universal precautions, secure the scene, and alert EMS. Administer the same treatment as for frostbite; however, never re-warm an area with deep-cold injury. Follow local protocol.</p> <hr/> <p><b>III. REVIEW</b></p> <ol style="list-style-type: none"> <li>1. Match the signs and symptoms for each of the three types of burns according to their depth.</li> <li>2. Apply the “Rule of Nines” to determine the Total Body Surface Area (TBSA) burnt on a patient when given a specific part of the body.</li> <li>3. List three steps for pre-hospital treatment of chemical burns.</li> <li>4. List three steps for pre-hospital treatment of electrical burns.</li> <li>5. List three signs and symptoms of heat cramps, heat exhaustion and heat stroke and describe pre-hospital treatment for each.</li> <li>6. List three signs and symptoms of hypothermia and frostbite, and describe pre-hospital treatment of each.</li> </ol> <hr/> <p><b>IV. EVALUATION</b></p> <ol style="list-style-type: none"> <li>1) Answer the evaluation questions. Give 10 minutes to complete it.</li> <li>2) Verify the achievement of objectives.</li> </ol> <hr/> <p><b>V. CLOSE</b></p> <ol style="list-style-type: none"> <li>1) Comments, suggestions.</li> <li>2) Thank the participants and announce the next topic.</li> </ol>	



## Lesson 13

### Post-Test

# Burns and Environmental Emergencies

1. Fill in the correct type of burn to match the signs and symptoms described:

**Partial thickness:** Burns displaying redness and blisters; burns to the epidermis and the dermis.

**Full thickness:** Burns that involve the muscle, skin and bone.

**Superficial:** Burns causing redness and pain; only the epidermis is affected.

2. You are assisting a patient that has been burned by hot oil. The patient presents with burns that cover the anterior trunk as well as the anterior part of the arm and forearm. Using the Rule of Nines estimate the TBSA.

**22.5%**

3. List three steps for pre-hospital treatment of chemical burns.

- 1) *Brush off dry chemicals, such as lime powder, before flushing with water.*
- 2) *Rinse the area with water for at least 20 minutes or more. Remove and set aside clothes and jewellery while the patient is being washed off.*
- 3) *Apply a sterile dressing to the affected area.*
- 4) *Treat for shock.*

4. List three steps for pre-hospital treatment of electrical burns.

- 1) *Check pulse and breathing, including airway obstruction.*
- 2) *Evaluate burns – look for contact wound and exit wound.*
- 3) *Apply a dry, sterile dressing to the burns.*
- 4) *Treat for shock.*

5. List three signs and symptoms of heat cramps and describe pre-hospital treatment.

**Signs and symptoms**

- *Severe muscle cramps, usually in the legs and abdomen.*
- *Exhaustion*
- *Nausea*
- *Periods of fainting*

**Pre-hospital treatment**

1. *Move the patient to a cool area.*
2. *Give the patient water.*



## Lesson 13

### Post-Test (cont'd.)

6. List three signs and symptoms of heat exhaustion and describe pre-hospital treatment.

#### **Signs and symptoms**

- *Rapid, shallow breathing*
- *Weak pulse*
- *Cold, clammy, pale skin and mucous membranes, with a lot of sweating*
- *Weakness*
- *Dizziness, sometimes leading to fainting*

#### **Pre-hospital treatment**

- 1) *Move the patient to a cool place to rest.*
- 2) *Remove or loosen clothing as necessary to cool the patient without causing chills.*
- 3) *Place the patient in a supine position with legs elevated 20 to 30 cm.*
- 4) *Administer oxygen per local protocol.*
- 5) *Give water, but not to an unconscious patient.*

7. List three signs and symptoms of heat stroke and describe pre-hospital treatment.

#### **Signs and symptoms**

- *Deep, rapid breathing*
- *Rapid, strong pulse followed by a rapid, weak pulse*
- *Dry, hot skin, sometimes red*
- *Dilated pupils*
- *Loss of consciousness*
- *Convulsions or muscular tremors*

#### **Pre-hospital treatment**

- 1) *Cool the patient quickly in any way possible. Remove the patient from the source of heat. Remove his or her garments and wrap the patient with wet sheets. Pour cold water on the sheets.*
- 2) *Place cold bags or ice packs below each armpit, behind the knees and around the ankles, and one on each side of the neck.*
- 3) *Look for a large container or bathtub and submerge the patient in cold water up to the neck. Use ice to cool the water.*



## Lesson 13

### Post-Test (cont'd.)

8. List three signs and symptoms of both mild and severe hypothermia, and list six steps for pre-hospital treatment.

#### Signs and symptoms of mild hypothermia

- *Chills*
- *Drowsiness*
- *Rapid breathing, slow pulse*
- *Loss of vision*
- *Sluggish pupils*
- *Uncontrollable shivering*

#### Signs and symptoms of severe hypothermia

- *Extremely slow breathing rate*
- *Extremely slow pulse rate*
- *Unresponsiveness*
- *Fixed and dilated pupils*
- *Rigid extremities*
- *Absence of shivering*

#### Pre-hospital treatment of hypothermia

- 1) *Conduct initial assessment and physical exam.*
- 2) *Remove the patient from the cold environment.*
- 3) *Maintain open airway and administer oxygen per local protocol.*
- 4) *Remove any wet clothing and cover patient with a blanket. Keep the patient dry.*
- 5) *If the patient is alert, offer warm liquids (non-stimulant) slowly.*
- 6) *Constantly assess vital signs.*

9. List three signs and symptoms of frostbite and three steps for pre-hospital treatment.

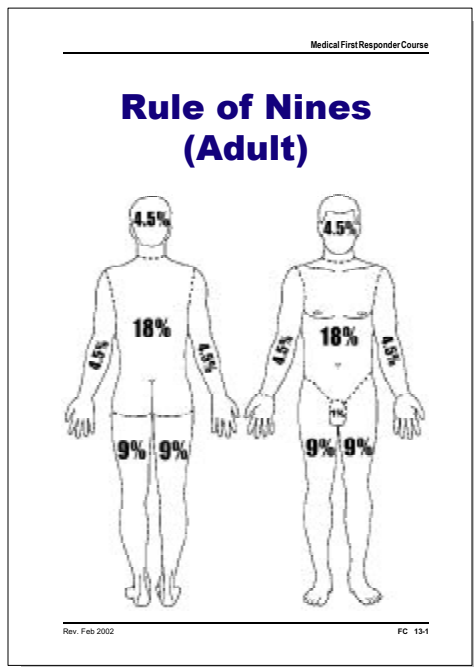
#### Signs and symptoms

- *Loss of sensation to the affected area.*
- *The affected area of skin becomes white and waxy. Dark skin will turn pale. This colour change can be very quick.*
- *Sometimes the area becomes swollen, blistered, and white.*

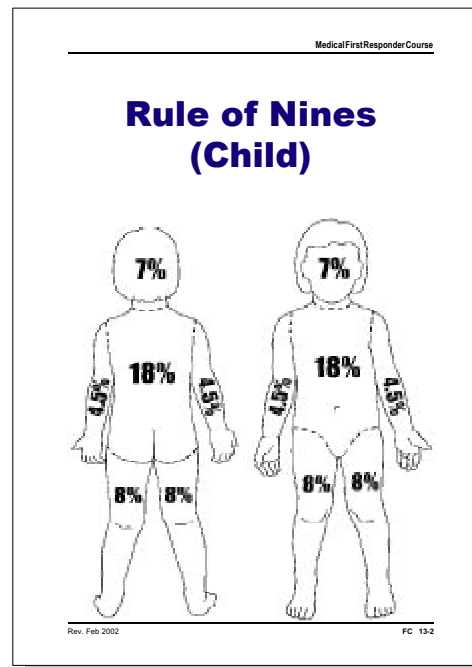
#### Pre-hospital treatment

- 1) *Remove the patient from the cold environment. Do not allow the patient to walk on a frozen limb.*
- 2) *Protect the frozen area further injury and re-freezing. For an injured extremity, stabilise.*
- 3) *Dry the affected area and apply a clean bandage. Place dressings between the fingers if they are affected. If superficial, cover and keep warm. If deep, apply dry, sterile dressings.*

1



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### Burn Severity

- **Depth of the burn**  
(superficial, partial & full thickness)
- **Percentage of burned surface area**
- **Location**
- **Complicating factors**  
(age, illness)

Rev. Feb 2002 FC 13-3

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Medical First Responder Course

## Lesson 13 Objectives

1. Match the signs and symptoms for each of the three types of burns according to their depth.
2. Apply the "Rule of Nines" to determine the Total Body Surface Area (TBSA) burnt on a patient when given a specific part of the body.

*more ...*

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Medical First Responder Course

*...cont'd.*

## Lesson 13 Objectives

3. List three steps for pre-hospital treatment of chemical burns.
4. List three steps for pre-hospital treatment of electrical burns.
5. List three signs and symptoms of heat cramps, heat exhaustion and heat stroke and describe pre-hospital treatment for each.

*more ...*

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Medical First Responder Course

*...cont'd.*

## Lesson 13 Objectives

6. List three signs and symptoms of both mild and severe hypothermia and list six steps for pre-hospital treatment.
7. List three signs and symptoms of frostbite and three steps for pre-hospital treatment.

*more ...*

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Medical First Responder Course

## Burns

Injuries caused by exposure to excessive heat from thermal, chemical, electrical or radiation

*more ...*

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Medical First Responder Course

## Burn Classifications (by depth)

- Superficial
- Partial thickness
- Full thickness

*more ...*

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## Rule of Nines (% Body Surface Area)

	<u>Adult</u>	<u>Child</u>
Head	9%	18%
Upper extremities	9% each	9% each
Anterior Trunk	18%	18%
Posterior Trunk	18%	18%
Genital	1%	incl. in ant. trunk
Lower extremities	18% each	14% each
<b>BSA</b>	<b>100%</b>	<b>100%</b>

*more ...*

Rev. Feb.2002 TR 13-6



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## Inhalation Injury

*Signs and symptoms*

- Singed nasal hair
- Burns to the face
- Specks of soot in the sputum
- Sooty or smoky smell on the breath
- Respiratory distress

more

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...cont'd.

## Inhalation Injury

*Signs and symptoms*

- Hoarseness, cough, or difficulty speaking
- Restricted chest movement
- Cyanosis

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## Heat Cramps

*Signs and symptoms*

- Severe muscle cramps
- Exhaustion
- Nausea
- Periods of fainting

Rev. Feb.2002 TR 13-9

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## Heat Exhaustion

*Signs and symptoms*

- Rapid, shallow breathing
- Weak pulse
- Cold, clammy and pale skin
- Weakness
- Dizziness

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## Heat Stroke

*Signs and symptoms*

- Deep, rapid breathing
- Rapid pulse fluctuating in strength
- Dry, hot skin
- Dilated pupils
- Loss of consciousness
- Convulsions or muscular tremors

more...

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Medical First Responder Course

## Mild Hypothermia

*Signs and symptoms*

- Chills
- Drowsiness
- Rapid breathing, slow pulse
- Loss of vision
- Sluggish pupils
- Uncontrollable shivering

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## Severe Hypothermia

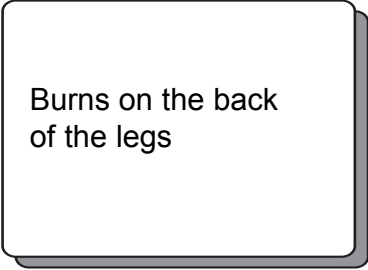

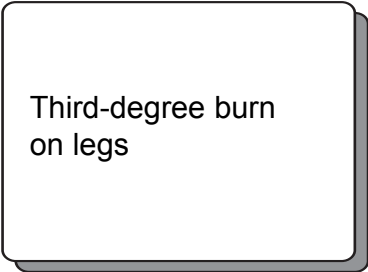
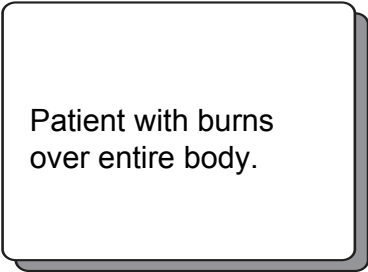
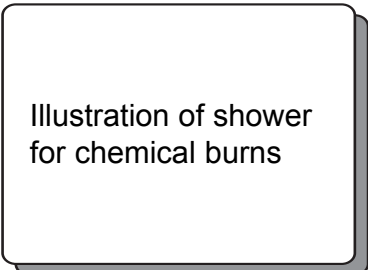
*Signs and symptoms*

- Extremely slow breathing
- Extremely slow pulse
- Unresponsiveness
- Fixed, dilated pupils
- Rigid extremities

Rev. Feb.2002TR 13-13

## **SLIDE PROGRAMME GUIDE**

### **LESSON 13: Burns and Environmental Emergencies**

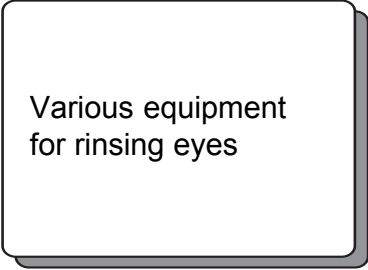
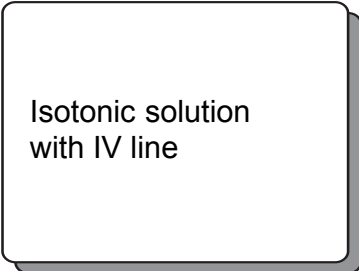
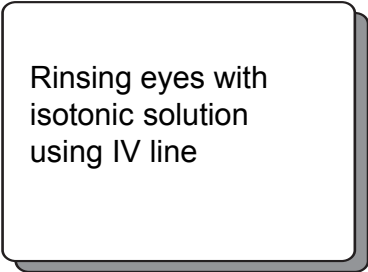
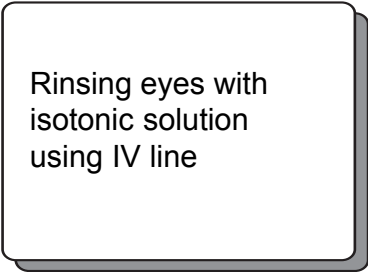
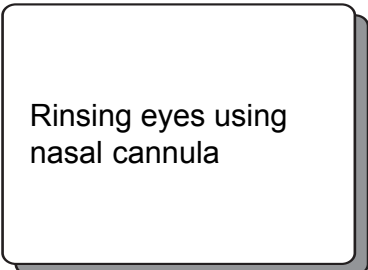
<b>Slide Name</b>	<b>Slide Number and Description</b>
 <p>Burns on the back of the legs</p>	<p><b>SL 13-1</b></p> <p>First degree burn with reddening of tissue.</p>
 <p>Blisters on arm</p>	<p><b>SL 13-2</b></p> <p>Arm with second-degree burn and blisters.</p>
 <p>Third-degree burn on legs</p>	<p><b>SL 13-3</b></p> <p>Third degree burn on legs.</p>
 <p>Patient with burns over entire body.</p>	<p><b>SL 13-4</b></p> <p>Patient presenting with burns over entire body.</p>
 <p>Illustration of shower for chemical burns</p>	<p><b>SL 13-5</b></p> <p>Illustration of shower wash used to remove chemicals spilled on body.</p>

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## **SLIDE PROGRAMME GUIDE**

### **LESSON 13: Burns and Environmental Emergencies**

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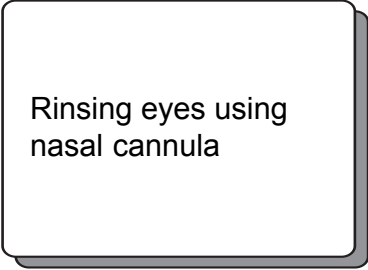
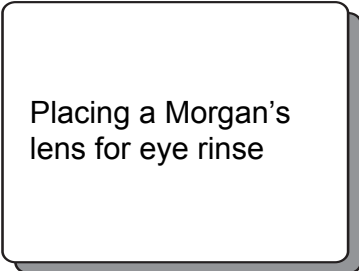
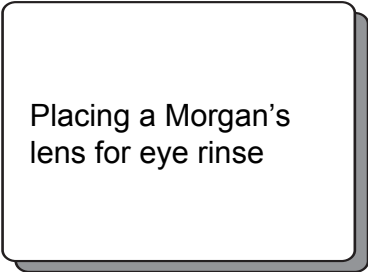
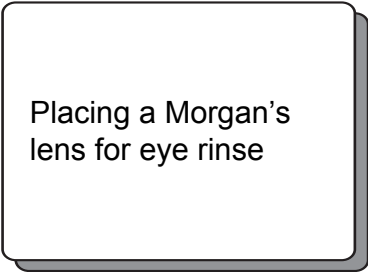

<b>Slide Name</b>	<b>Slide Number and Description</b>
 <p>Various equipment for rinsing eyes</p>	<b>SL 13-6</b>  Various types of equipment used to rinse eyes with chemical burns.
 <p>Isotonic solution with IV line</p>	<b>SL 13-7</b>  Isotonic solution or sterile water with IV line for rinsing eyes with chemical burns.
 <p>Rinsing eyes with isotonic solution using IV line</p>	<b>SL 13-8</b>  Rinsing eyes with isotonic solution through IV line. Sterile water may also be used.
 <p>Rinsing eyes with isotonic solution using IV line</p>	<b>SL 13-9</b>  Rinsing eyes with isotonic solution through IV line. Sterile water may also be used.
 <p>Rinsing eyes using nasal cannula</p>	<b>SL 13-10</b>  Rinsing eyes using nasal cannula. The cannula is connected to isotonic solution (IV bag).

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## **SLIDE PROGRAMME GUIDE**

### **LESSON 13: Burns and Environmental Emergencies**

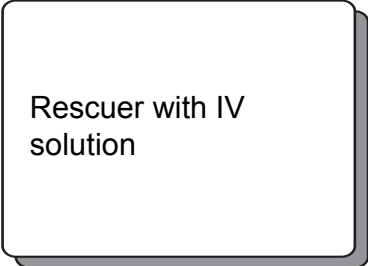
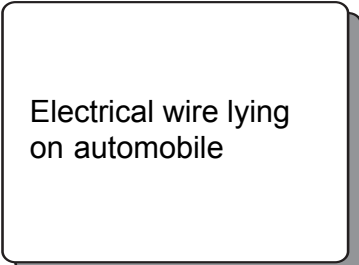
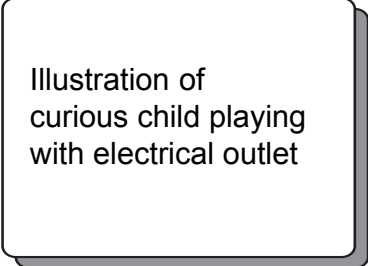
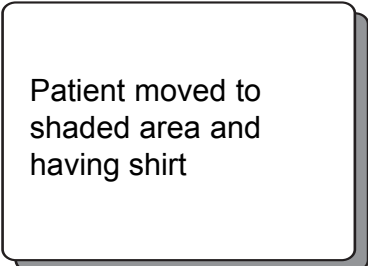
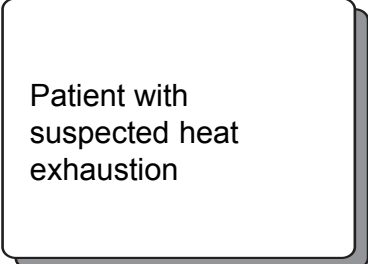
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<b>Slide Name</b>	<b>Slide Number and Description</b>
 <p>Rinsing eyes using nasal cannula</p>	<p><b>SL 13-11</b></p> <p>Rinsing eyes using nasal cannula. The cannula is connected to isotonic solution (IV bag).</p>
 <p>Placing a Morgan's lens for eye rinse</p>	<p><b>SL 13-12</b></p> <p>Placing a Morgan's lens for eye rinse. The Morgan's lens is similar to a hard contact lens with a plastic tube attached. The first step in placing the lens is to open the upper eyelid and place the top part of the lens.</p>
 <p>Placing a Morgan's lens for eye rinse</p>	<p><b>SL 13-13</b></p> <p>Morgan's lens: The second step is to open the lower eyelid and place the remainder of the lens.</p>
 <p>Placing a Morgan's lens for eye rinse</p>	<p><b>SL 13-14</b></p> <p>Morgan's lens: The third step is to instruct the patient to close eyes.</p>
 <p>Placing a Morgan's lens for eye rinse</p>	<p><b>SL 13-15</b></p> <p>Morgan's lens: The fourth step is to open the IV line to allow rinse solution to flow.</p>

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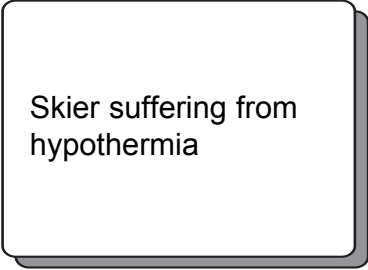
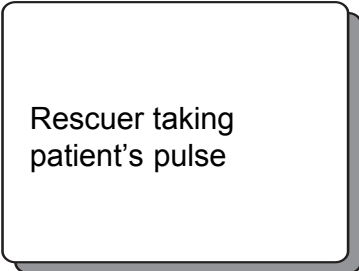



**SLIDE PROGRAMME GUIDE**  
**LESSON 13: Burns and Environmental Emergencies**

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Slide Name	Slide Number and Description
 A white rectangular box with rounded corners and a grey drop shadow, containing the text 'Rescuer with IV solution'.	<b>SL 13-16</b>  Rescuer with IV solution
 A white rectangular box with rounded corners and a grey drop shadow, containing the text 'Electrical wire lying on automobile'.	<b>SL 13-17</b>  Electrical wire lying on automobile poses high risk of electrical burns.
 A white rectangular box with rounded corners and a grey drop shadow, containing the text 'Illustration of curious child playing with electrical outlet'.	<b>SL 13-18</b>  Illustration of female child playing with outlet. Explain how electricity travels through the body (positive/negative/ground).
 A white rectangular box with rounded corners and a grey drop shadow, containing the text 'Patient moved to shaded area and having shirt'.	<b>SL 13-19</b>  Patient with suspected heat exhaustion being moved to cooler area and having shirt removed.
 A white rectangular box with rounded corners and a grey drop shadow, containing the text 'Patient with suspected heat exhaustion'.	<b>SL 13-20</b>  Patient with suspected heat exhaustion resting in the shade next to rescuer.

## SLIDE PROGRAMME GUIDE

### LESSON 13: Burns and Environmental Emergencies

Slide Name	Slide Number and Description
	<b>SL 13-21</b>  Skier suffering from hypothermia. Exposure to cold can lead to hypothermia and/or other cold
	<b>SL 13-22</b>  Rescuer taking vital signs of patient suffering of suspected heat stroke.
	
	
	



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## Medical First Responder Course

# Lesson Plan 14

## Poisoning

**Approximate Duration:** 1 hour, 15 minutes

**Preparation:** Read reference material for additional information on treatments.

**Materials:**

- Water
- Soap
- Activated charcoal
- Transparencies
- Flipcharts
- Handout

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. List the signs and symptoms of poisoning, and steps for pre-hospital treatment.
2. List four specific signs and symptoms of ingested poisons.
3. List four specific signs and symptoms of inhaled poisons.
4. List four specific signs and symptoms of absorbed poisons.
5. List the signs and symptoms of injected poisons, including snakebites, and the steps for pre-hospital treatment.
6. List the signs and symptoms for alcohol abuse and the steps for pre-hospital treatment.
7. List the signs and symptoms for drug abuse and the steps for pre-hospital treatment.





Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 10-1 TR 10-2	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce the instructor and assistant(s).</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives.</li> </ol>	
TR 10-3	<p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Poisons</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Any substance that can impair or cause death of cell structure or function</p> </div> <p>People are affected differently by the same dose of a poison. Some people may have developed a tolerance to a specific type of poison; however, even a small dose may be lethal to others.</p>	
TR 10-4	<p>A poison can enter the body four ways:</p> <ul style="list-style-type: none"> <li>• Ingestion</li> <li>• Inhalation</li> <li>• Absorption</li> <li>• Injection</li> </ul>	
NOTE	<p><b>Scene Assessment</b></p> <p>Always perform a scene assessment – safety first. Protect yourself, your crew and others from the poison. Use universal precautions. Try to identify the source or substance involved. Get as much information as you can, as quickly as possible.</p> <p>Perform the initial assessment and obtain the patient’s history. Signs and symptoms of poisoning will vary depending on the type of poison.</p> <p><b>&lt;Ask participants about local poison control centres in their localities.&gt;</b></p>	
TR 10-5	<p><b>General signs and symptoms of poisoning</b></p> <ul style="list-style-type: none"> <li>• Nausea and/or vomiting</li> <li>• Headache</li> <li>• Abdominal pain</li> <li>• Altered mental status or coma</li> </ul>	
TR 10-6	<ul style="list-style-type: none"> <li>• Seizures</li> <li>• Rapid or slow heart rate</li> <li>• High, normal or low blood pressure</li> <li>• Possible dilation or constriction of pupils</li> </ul>	
TR 10-7	<ul style="list-style-type: none"> <li>• Shortness of breath</li> <li>• Injury to skin (discoloration, burns, injection marks, swelling)</li> <li>• Diarrhoea</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment for poisoning</b></p> <p><b>Use universal precautions and secure the scene. Use special protective equipment when necessary.</b></p> <ol style="list-style-type: none"> <li>1. Move the patient away from the source of the poisoning, especially in inhalation and absorbed poisoning.</li> <li>2. For absorbed poisons: <ul style="list-style-type: none"> <li>• Remove the patient's clothing</li> <li>• Blot the poison from the skin with a dry cloth. If the poison is a dry powder, brush it off.</li> <li>• Flood the affected area with copious amounts of water until EMS arrives.</li> </ul> </li> <li>3. Maintain open airway. Administer oxygen per local protocol.</li> <li>4. Perform initial assessment. Do not perform mouth to mouth ventilation in inhaled or ingested poison cases. Use the BVM.</li> <li>5. Call your local poison control centre, if available.</li> <li>6. Perform physical exam.</li> <li>7. For ingested poisons: <ul style="list-style-type: none"> <li>• Give the patient one or two glasses of water to dilute the poison.</li> <li>• Induced vomiting is contraindicated in poisoning with <b>hydrocarbons, strong acids, alkalis, and corrosives.</b></li> <li>• Per local protocol, give the patient activated charcoal – 2 or 3 spoonfuls in eight ounces of water.</li> </ul> </li> <li>8. Bring the suspected source; container, labels, or other evidence of the poison to the hospital.</li> <li>9. Treat for shock.</li> <li>10. Continually monitor the patient.</li> </ol> <p>Transport the patient.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 10-8	<h2>2. Ingested Poisons</h2> <p>An ingested poison is one that is introduced into the digestive tract by way of the mouth. In cases of ingested poison, all information should be obtained as quickly as possible while the initial assessment is performed. Look for signs of spilled liquids, tablets, capsules, poisonous substances or any container that can help you to identify the substance or source of poisoning. Signs and symptoms of ingested poisoning may be related to the digestive system.</p> <h3>Specific signs and symptoms of ingested poisons</h3> <ul style="list-style-type: none"><li>• Burns, swelling or stains around the mouth</li><li>• Abnormal breathing</li><li>• Diaphoresis</li><li>• Excessive salivation or foaming from the mouth</li></ul> <h2>3. Inhaled Poisons</h2> <p>Poisoning caused by fumes and vapours can be swift. The body absorbs inhaled poisons very rapidly. The longer the exposure the worse the prognosis. You may need to use special masks to gain access to the patient in a hazardous environment. Additional expert help may be required. Signs and symptoms of ingested poisoning is more related to the respiratory system.</p> <div><p><b>Though it is important to give care immediately, do not enter the scene unless you are sure it is safe.</b></p></div> <h3>Scene Assessment</h3> <p>Assessment of inhaled poisons can be very dangerous. To ensure your safety, be wary of peculiar odours or visible vapours. If you are not properly equipped or trained, have trained personnel bring the patients to you. Do not enter the scene unless it is safe. Search for other victims. Try to get specific information on the poison and the patient's medical information as soon as possible.</p> <p>It is important to obtain the patient's information or that of witnesses as soon as possible, to look for indications of inhaled poison.</p>	



**LP 14-5**



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 10-11</p> <p>TR 10-12</p>	<h2>5. Injected Poisons</h2> <p>An injected poison enters the body through a break in the skin. The break can be caused by a needle (drugs), an insect bite or sting, or puncture.</p> <h3>Scene Assessment</h3> <p>During scene assessment, look for clues such as syringes and drug paraphernalia. Inspect surroundings for animals, insects or marine life. Conduct initial assessment, paying close attention to airway breathing. Monitor mental status and prioritise patients for transport. Obtain a focused history and perform a physical exam. Get information on the suspected poison or its origin. Try to find answers to the following questions:</p> <ul style="list-style-type: none"> <li>• Is there a history of drug abuse?</li> <li>• Any history of allergic reaction to bites or stings?</li> <li>• How long from time of injection to onset of signs or symptoms?</li> </ul> <h3>Specific signs and symptoms of injected poisons</h3> <ul style="list-style-type: none"> <li>• Needle tracks</li> <li>• Pain, swelling, or redness at the injection site</li> <li>• History of bites or stings</li> <li>• Bite mark or stinger embedded in the skin</li> <li>• Numbness at the injury site after a few hours</li> <li>• Other symptoms similar to ingested poisons</li> </ul> <h3>Pre-hospital treatment for injected poisons</h3> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Maintain open airway</li> <li>2) Administer oxygen. Be alert for possible vomiting.</li> <li>3) Protect yourself and the patient from repeated injections. Cut off patient's clothing to protect from possible repeated insect stings or bites</li> <li>4) For <b>bee stings</b>: remove the stinger together with the poison sac. Use a plastic card and scrape the skin's surface to keep the sac from breaking inside the patient's skin. Place a bag of ice or cold pack on the sting.</li> <li>5) Bring all containers, labels, or other evidence of poisoning to the hospital.</li> <li>6) Conduct a physical exam.</li> <li>7) Treat for shock.</li> <li>8) Continually monitor the patient during transport.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Snake Bites</b></p> <p>These are quite common in certain areas. Signs and symptoms may delay several hours before presenting. Death can occur quickly if the patient has an allergic reaction to the venom.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>Treat all snakebites as poisonous.</b></p> </div> <p><b>NOTE</b> <i>&lt;Ask participants to identify local poisonous snakes.&gt;</i></p> <p><b>Specific signs and symptoms of poisonous snake bites</b></p> <p><b>TR 10-13</b></p> <ul style="list-style-type: none"> <li>• Nausea and vomiting</li> <li>• Weakness, paralysis</li> <li>• Seizures, decreased level of consciousness</li> </ul> <p><b>TR 10-14</b></p> <ul style="list-style-type: none"> <li>• Puncture wound</li> <li>• Pain and/or burning sensation around the bite mark</li> <li>• Blood oozing from the bite mark</li> <li>• Discoloration and swelling</li> </ul> <p><b>Pre-hospital treatment for snake bites</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Move the patient to a safe place.</li> <li>2) Calm the patient and try to place him/her in a comfortable position.</li> <li>3) Locate the bite marks and clean them with water and soap.</li> <li>4) Remove rings, bracelets and any restrictive garments from the affected extremity. <b>Do not apply tourniquets, do not make incisions</b> around the bite marks, and <b>do not suction</b> the venom from the wound.</li> <li>5) Treat for shock and provide basic life support as needed.</li> <li>6) Do not give the patient any food or drink.</li> <li>7) If possible, capture the snake for species identification.</li> <li>8) Administer oxygen per local protocol.</li> <li>9) Continually monitor the patient during transport.</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>Only anti-venin works as an antidote for a poisonous snake bite.</b></p> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>TR 10-15</b></p>	<p>Anti-venin serum must be administered on the basis of three criteria:</p> <ul style="list-style-type: none"> <li>• Specificity (appropriate to the snake species)</li> <li>• Appropriate quantity</li> <li>• Within the shortest possible time</li> </ul> <p><b>6. Alcohol Abuse</b></p> <p>Alcohol is a drug with wide social acceptance when ingested moderately. Abuse of this drug leads to alcoholism and serious chronic intoxication with great physical and mental deterioration. A patient under the influence of alcohol can be dangerous to him/herself and to others.</p> <p>If the patient allows it, conduct an initial assessment and physical exam including an interview; the assistance of friends and witnesses can be very helpful.</p> <p><b>Specific signs and symptoms of alcohol abuse/poisoning</b></p> <ul style="list-style-type: none"> <li>• Smell of alcohol on the breath and/or clothes.</li> <li>• Staggering</li> <li>• Slurred speech</li> <li>• Nausea and vomiting</li> <li>• Redness of the face</li> <li>• Altered behaviour</li> </ul> <p><b>Pre-hospital treatment for alcohol abuse</b></p> <p>Use universal precautions and secure the scene. Persons with alcohol poisoning can hurt others or themselves.</p> <ol style="list-style-type: none"> <li>1) Verify whether it is strictly a case of alcohol abuse (determine if diabetic).</li> <li>2) Per local protocol, allow EMS decide if police intervention is required.</li> <li>3) Monitor vital signs and stay alert for breathing problems. Be alert for vomiting and take steps to prevent aspiration.</li> <li>4) Protect the patient from injury without using restrictive means.</li> <li>5) Give oxygen per local protocol.</li> </ol> <p>Transport the patient.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 10-17	<p><b>Signs and symptoms of alcohol withdrawal (<i>Delirium Tremens</i>)</b></p> <ul style="list-style-type: none"> <li>• Confusion and restlessness</li> <li>• Altered behaviour</li> <li>• Hallucinations</li> <li>• Trembling hands</li> <li>• Spasms or convulsions</li> </ul> <p><b>7. Drug Abuse</b></p> <p>It is not necessary for the rescuer to know the specific names and the effects of each one of the drugs, but the medical first responder should have the ability to identify a possible case of drug abuse. The five types of frequently abused drugs are:</p> <ul style="list-style-type: none"> <li>• <b>Stimulants:</b> These stimulate the central nervous system, causing the user to become excited. This group of drugs includes amphetamines, cocaine, caffeine, asthmatic drugs and vasoconstrictive drugs.</li> <li>• <b>Depressants:</b> These depress the central nervous system and include non-barbiturate sedatives, diazepam, bromazepam, lorazepam, methaqualone, paraldehyde, barbiturates (pentobarbital, Phenobarbital, Secobarbital) and anti-convulsants. These reduce pulse and breathing, cause drowsiness and slow the reflexes.</li> <li>• <b>Analgesic narcotics</b> (opium-derivatives): Their use produces an intense state of relaxation. Some are easily obtainable, such as codeine found in cough syrups. Morphine, heroin, and Demerol belong to this group of drugs. These drugs reduce body temperature, slow the pulse and breathing, relax the muscles, and cause pupil dilation, drowsiness, and sluggishness.</li> <li>• <b>Hallucinogens:</b> These drugs alter personality and distort perception. They include LSD, PCP, STP, mescaline, peyote, and psilocybin. Marijuana also has some hallucinogenic properties. Patients often imagine hearing unusual sounds and seeing strange colours. Persons using hallucinogens can become aggressive and pose a threat to you, others, and themselves.</li> <li>• <b>Volatile chemicals:</b> The vapours of certain chemical substances cause excitement, euphoria or the sensation of flying. In general these chemicals are solvents, cleaning fluids, glues and gasoline. The effects are temporary loss of reality, loss of the sense of smell, accelerated pulse and breathing and possible coma.</li> </ul>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>TR 10-18</b></p> <p><b>TR 10-19</b></p>	<p><b>General signs and symptoms of drug abuse</b></p> <p>The following list is a combination of the various signs and symptoms for the different drugs described above.</p> <ul style="list-style-type: none"> <li>• Excitability</li> <li>• Drowsiness and slow reflexes</li> <li>• Reduced pulse and breathing</li> <li>• Accelerated pulse and breathing</li> <li>• Relaxed muscles</li> <li>• Constricted or dilated pupils</li> <li>• Distorted perception</li> <li>• Aggressive behaviour</li> <li>• Euphoria</li> </ul> <p><b>Pre-hospital treatment for drug abuse</b></p> <p>Use universal precautions and secure the scene. When speaking with the patient, be tactful and ask directly if he/she is taking any “medication”.</p> <ol style="list-style-type: none"> <li>1) Provide basic life support.</li> <li>2) Induce vomiting if the patient is conscious and if the overdose was taken orally within the last 30 minutes.</li> <li>3) If the patient is hyperactive, apply restraints to prevent self-injury and injury to others.</li> <li>4) Speak with the patient to win his/her trust and to monitor level of consciousness.</li> <li>5) Monitor the patient’s breathing carefully because sedatives can cause slow breathing and lead to possible respiratory arrest.</li> <li>6) Comfort the patient and provide emotional support.</li> <li>7) Watch for allergic reactions.</li> <li>8) Keep all evidence of drug abuse.</li> <li>9) Call your local poison control centre, if available.</li> <li>10) Administer oxygen per local protocol.</li> </ol> <p>Transport the patient.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <p><b><i>III. REVIEW</i></b></p> <p><b><i>&lt;Review objectives on page 1 to ensure participants have understood them clearly. Answer questions from participants.&gt;</i></b></p> <hr/> <p><b><i>IV. EVALUATION</i></b></p> <ol style="list-style-type: none"><li>1. Fill out the evaluation form.</li><li>2. Confirm the successful achievement of lesson objectives.</li></ol> <hr/> <p><b><i>V. CLOSE</i></b></p> <ol style="list-style-type: none"><li>1. Explanations, comments, suggestions</li><li>2. Thank the participants and announce the next lesson.</li></ol>	



## Lesson 14

### Post-Test

### Poisoning

1. List the signs and symptoms of poisoning, and the steps for pre-hospital treatment.

#### Signs and symptoms

- *Nausea and/or vomiting*
- *Headache*
- *Abdominal pain*
- *Altered mental status (from disorientation to unresponsiveness)*
- *Seizures*
- *Rapid or slow heart rate*
- *High, normal or low blood pressure*
- *Possible dilation or constriction of pupils*
- *Shortness of breath*
- *Injury to skin (discoloration, burns, injection marks, swelling)*
- *Diarrhoea*

#### Pre-hospital treatment

1. *Move the patient away from the source of the poisoning, especially in inhalation and absorbed poisoning.*
2. *For absorbed poisons:*
  - *Remove the patient's clothing*
  - *Blot the poison from the skin with a dry cloth. If the poison is a dry powder, brush it off.*
  - *Flood the affected area with copious amounts of water until EMS arrives.*
3. Maintain open airway. Administer oxygen per local protocol.
4. Perform initial assessment. Do not perform mouth to mouth ventilation in inhaled poisoning cases. Use the BVM.
5. Call your local poison control centre, if available.
6. Perform physical exam.
7. *For ingested poisons:*
  - Give the patient one or two glasses of water to dilute the poison.
  - Induced vomiting is contraindicated in poisoning with **hydrocarbons, strong acids, alkalis, and corrosives.**
  - Per local protocol, give the patient activated charcoal – 2 or 3 spoonfuls in eight ounces of water.
8. Bring the suspected source; container, labels, or other evidence of the poison to the hospital.
9. Treat for shock.
10. Continually monitor the patient.



## Lesson 14

### Post-Test (cont'd.)

2. List four specific signs and symptoms of ingested poisons.
  - *Burns, swelling or stains around the mouth*
  - *Abnormal breathing*
  - *Diaphoresis*
  - *Excessive salivation or foaming from the mouth*
3. List four specific signs and symptoms of inhaled poisons.
  - *History of inhalation abuse*
  - *Chest pain or chest tightness*
  - *Burning sensation in chest or throat*
  - *Cough, wheezing, or rales*
4. List four specific signs and symptoms of absorbed poisons.
  - *History of exposures*
  - *Liquid or residue on the skin*
  - *Itching or irritation*
  - *Rash or blisters*
5. List the signs and symptoms of injected poisons, including snakebites, and the steps for pre-hospital treatment.

#### Signs and symptoms

- *Needle tracks*
- *Pain, swelling, or redness at the injection site*
- *History of bites or stings*
- *Bite mark or stinger embedded in the skin*
- *Numbness at the injury site after a few hours*

#### Pre-hospital treatment

- 1) *Move the patient to a safe place.*
- 2) *Calm the patient and try to place him/her in a comfortable position.*
- 3) *Locate the bite marks and clean them with water and soap.*
- 4) *Remove rings, bracelets and any restrictive garments from the affected extremity. **Do not apply tourniquets, do not make incisions** around the bite marks, and **do not suction** the venom from the wound.*
- 5) *Treat for shock and provide basic life support as needed.*
- 6) *Do not give the patient any food or drink.*
- 7) *If possible, capture the snake for species identification.*
- 8) *Administer oxygen per local protocol.*
- 9) *Continually monitor the patient during transport.*



## Lesson 14

### Post-Test (cont'd.)

6. List the signs and symptoms for alcohol abuse and the steps for pre-hospital treatment.

#### Signs and symptoms

- *The smell of alcohol on the breath; it can also be on the patient's clothes. If the patient is diabetic, and especially if decompensated, may present with a fruity or acetone smell on the breath, dizziness, vomiting and altered mental status.*
- *Staggering*
- *Slurred speech*
- *Nausea and vomiting*
- *Redness of the face*
- *Altered behaviour*

#### Pre-hospital treatment

- 1) *Verify whether it is strictly a case of alcohol abuse (determine if diabetic).*
- 2) *Per local protocol, allow EMS decide if police intervention is required.*
- 3) *Monitor vital signs and stay alert for breathing problems.*
- 4) *Protect the patient from injury without using restrictive means.*
- 5) *Give oxygen per local protocol.*
- 6) *Transport the patient.*

7. List the signs and symptoms for drug abuse and the steps for pre-hospital treatment.

#### Signs and symptoms

- *Excitability*
- *Drowsiness and slow reflexes*
- *Reduced pulse and breathing*
- *Accelerated pulse and breathing*
- *Relaxed muscles*
- *Constricted or dilated pupils*
- *Distorted perception*
- *Aggressive behaviour*
- *Euphoria*
- *Possible coma*



## **Lesson 14**

### **Post-Test (cont'd.)**

#### **Pre-hospital treatment**

- 1) *Provide basic life support.*
- 2) *Induce vomiting if the patient is conscious and if the overdose was taken orally within the last 30 minutes.*
- 3) *If the patient is hyperactive, apply restraints to prevent self-injury and injury to others.*
- 4) *Speak with the patient to win his/her trust and to maintain level of consciousness.*
- 5) *Monitor the patient's breathing carefully because sedatives can cause breathing depression and death.*
- 6) *Comfort the patient and provide emotional support.*
- 7) *Watch for allergic reactions.*
- 8) *Keep all evidence of drug abuse.*
- 9) *Call the Poison Control Centre, if available.*
- 10) *Administer oxygen per local protocol.*

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## Lesson 14 Objectives

1. List the signs and symptoms of poisoning, and steps for pre-hospital treatment.
2. List four specific signs and symptoms of ingested poisons.
3. List four specific signs and symptoms of inhaled poisons.
4. List four specific signs and symptoms of absorbed poisons.

*more...*

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*...cont'd.*

## Lesson 14 Objectives

5. List the signs and symptoms of injected poisons, including snakebites, and the steps for pre hospital treatment.
6. List the signs and symptoms for alcohol abuse and the steps for pre-hospital treatment.
7. List the signs and symptoms for drug abuse and the steps for pre-hospital treatment.

*more...*

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3

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## Poison

Any substance that can impair or cause death of cell structure or function.

*more...*

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## Poisons

*can enter the body four ways:*

- Ingestion
- Inhalation
- Absorption
- Injection

*more...*

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## Poisoning

*General signs and symptoms*

- Nausea and/or vomiting
- Headache
- Abdominal pain
- Altered mental status or coma

*more...*

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*...cont'd.*

## Poisoning

*General signs and symptoms*

- Seizures
- Rapid or slow heart rate
- High, normal or low blood pressure
- Possible dilation or constriction of pupils

*more...*

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...cont'd.

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## Poisoning

*General signs and symptoms*

- Shortness of breath
- Injury to skin (discoloration, burns, injection marks, swelling)
- Diarrhoea

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## Ingested Poisons

*Specific signs and symptoms*

- Burns, swelling or stains around the mouth
- Abnormal breathing
- Diaphoresis
- Excessive salivation or foaming at the mouth

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## Inhaled Poisons

*Specific signs and symptoms*

- History of inhalation abuse
- Chest pain or tightness
- Burning sensation in the chest or throat
- Coughing, wheezing or rales

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## Absorbed Poisons

*Specific signs and symptoms*

- History of exposures
- Liquid or residue on the skin
- Itching or irritation
- Rash or blisters

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## Injected Poisons

*Specific signs and symptoms*

- Needle tracks
- Pain, swelling or redness at the injection site
- History of bites or stings

more...

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...cont'd.

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## Injected Poisons

*Specific signs and symptoms*

- Bite marks or embedded stinger
- Numbness at the injury site
- Other symptoms similar to ingested poisons

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## Snake Bites

*Specific signs and symptoms*

- Nausea and vomiting
- Weakness and paralysis
- Seizures or decreased level of consciousness

*more...*

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...cont'd.

## Snake Bites

*Specific signs and symptoms*

- Puncture wound
- Pain and/or burning sensation around bite mark
- Blood oozing from the bite mark
- Discoloration and swelling

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## Criteria for Administering Anti-venin

- Specificity (appropriate to the snake species)
- Appropriate quantity
- Within the shortest possible time

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## Alcohol Abuse / Poisoning

*Specific signs and symptoms*

- Smell of alcohol on breath/clothes
- Staggering
- Slurred speech
- Nausea and vomiting
- Redness of the face
- Altered behaviour

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## Drug Categories

- Stimulants
- Depressants
- Analgesic narcotics
- Hallucinogens
- Volatile chemicals (vapours)

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## Drug Abuse

*General signs and symptoms*

- Excitability
- Drowsiness and slow reflexes
- Reduced pulse and breathing
- Accelerated pulse and breathing
- Relaxed muscles

*more...*

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...cont'd.

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## Drug Abuse

*General signs and symptoms*

- Constricted or dilated pupils
- Distorted perception
- Aggressive behaviour
- Euphoria

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## **Medical First Responder Course**

# **Lesson Plan 15**

## **Medical Emergencies, Part 1:**

### **Myocardial Infarction, Angina Pectoris, Congestive Heart Failure, Hypertension and Abdominal Distress**

**Suggested Duration: 1 hour, 30 minutes**

**Materials:**

- Transparencies
- Flipcharts
- Handout

#### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

- 1) Define a medical emergency.
- 2) Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.
- 3) Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.
- 4) Define congestive heart failure, list eight signs and symptoms, and four steps for pre-hospital treatment.
- 5) Define hypertension, list five signs and symptoms and five steps for pre-hospital treatment.
- 6) List ten signs and symptoms of abdominal distress and list five steps for pre-hospital treatment.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 15-1 TR 15-2 TR 15-3</p>	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce the instructor and assistant.</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>Request the participants to define a medical emergency.</b></p> <p><b>1. Medical Emergencies</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px;"> <p><b>Definition:</b> A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.</p> </div> <p>Such a state can be caused by germ pathogens (microorganisms), alteration in the functioning of organ, or foreign substances, such as poisons. In most cases, the problem is not a consequence of trauma.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px;"> <p><b>If a patient presents with atypical vital signs, assume that the patient has a medical emergency.</b></p> </div> <p>The most common cardiovascular medical emergencies are:</p> <ul style="list-style-type: none"> <li>• Myocardial infarction (heart attack)</li> <li>• Angina pectoris</li> <li>• Congestive heart failure</li> <li>• Hypertension</li> </ul> <p><b>1.1 Detection</b></p> <ul style="list-style-type: none"> <li>• Medical emergencies can create a situation leading to trauma and may remain unnoticed. Example: A person that has a myocardial infarction can lose consciousness and fall, suffering a traumatic injury. Always consider the possibility that an underlying medical emergency may have lead to the traumatic event.</li> <li>• Trauma can induce a medical emergency. Example: the stress of an accident can produce a myocardial infarction, cerebral vascular accident or a seizure. Conduct an initial assessment and physical exam and continue monitoring the patient closely.</li> </ul>	
<p>TR 15-4</p> <p>TR 15-5</p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>FC 15-1</b></p> <p><b>FC 15-2</b></p> <p><b>FC 15-3</b></p>	<h2>1.2 Signs of a Medical Emergency</h2> <p>If the patient presents with <b>atypical</b> vital signs, assume that the patient has a medical emergency. Changes in any of the following can indicate a medical emergency:</p> <ul style="list-style-type: none"> <li>• Mental status (unconscious, confused, comatose)</li> <li>• Heart rate, rhythm and/or quality</li> <li>• Breathing rate, rhythm, and/or quality</li> <li>• Skin temperature, colour and/or condition</li> <li>• Pupil size, symmetry, and reactivity to light</li> <li>• Condition and colour of the mucous membranes (dryness, paleness, cyanosis)</li> <li>• Breath scent (alcohol, acetone)</li> <li>• Muscular activities (spasms and paralysis)</li> <li>• Vomiting</li> </ul> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p><b>In an adult patient, the following conditions may indicate a possible medical emergency:</b></p> <ul style="list-style-type: none"> <li>• <b>Heart rate above 100 or less than 60 bpm.</b></li> <li>• <b>Respiratory rate less than 12 or more than 20 rpm.</b></li> </ul> </div> <h2>1.3 Symptoms of a Medical Emergency</h2> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p><b>Consider all patients' complaints as valid. If the patient complains of not feeling well, assume that he/she is having a medical emergency.</b></p> </div> <ul style="list-style-type: none"> <li>• Pain</li> <li>• Fever</li> <li>• Stomach discomfort, nausea, atypical bowel or bladder activity</li> <li>• Vertigo, fainting sensation, feeling of impending doom</li> <li>• Shortness of breath or difficulty breathing</li> <li>• Chest or abdominal pain</li> <li>• Excessive thirst, hunger or strange taste in the mouth</li> <li>• Sensation of numbness and tingling</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 15-6</p> <p>FC 15-7</p> <p>FC 15-8</p>	<p><b>1.4 Heart Function</b></p> <ul style="list-style-type: none"> <li>The heart is a muscle that is oxygenated by the coronary arteries.</li> <li><b>Arteriosclerosis</b> is a progressive narrowing of the arteries, in which deposits of fat attach to the internal walls of the arteries, reducing their diameter.</li> <li>When the coronary arteries are narrowed, the amount of oxygen supplied to the muscle is reduced and the patient experiences chest pain. This pain is called <b>angina pectoris</b>.</li> <li>When the coronary arteries are obstructed, oxygen cannot reach the muscle. This part of the muscle then dies, causing a condition called a <b>myocardial infarction</b>. It is the consequence of an occlusion of one or several of the coronary arteries.</li> <li>If the patient loses too much of the heart muscle, the heart will be unable to pump enough blood to supply the rest of the body. This leads to shock and soon after, death.</li> </ul> <p><b>2. Cardiovascular Emergencies</b></p> <p><b>2.1 Myocardial Infarction</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Literally meaning “death of the heart,” caused by partial or total blockage of blood flow to the heart, leading to death of cardiac muscle tissue.</p> </div> <p>Myocardial infarction is commonly known as “heart attack”.</p> <p><b>Signs and Symptoms of Myocardial Infarction</b></p> <ul style="list-style-type: none"> <li>Chest discomfort, such as pain or heaviness. The common location is substernal, radiating to the neck, jaw, left shoulder and/or left arm.</li> <li>Abnormal pulse</li> <li>Nausea or vomiting</li> <li>Shortness of breath</li> <li>Difficulty breathing or rapid, shallow respirations</li> <li>Sudden weakness</li> <li>Anxiety</li> <li>Syncope (fainting)</li> <li>Profuse sweating</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 15-7	<p><b>If any of the above signs or symptoms is present, assume that the patient is having or will soon have a myocardial infarction.</b></p> <p><b>Pre-hospital treatment for myocardial infarction</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Instruct the patient to stop all movement.</li> <li>2) Place the responsive patient in a comfortable position, usually semi-reclining or sitting.</li> <li>3) Maintain open airway.</li> <li>4) Administer oxygen per local protocol. If needed, provide artificial ventilation or CPR.</li> <li>5) Loosen restrictive clothing.</li> <li>6) Maintain body temperature as close to normal as possible.</li> <li>7) Comfort and reassure the patient.</li> <li>8) Continue to monitor the patient's vital signs.</li> </ol> <p><b>2.2 Angina Pectoris</b></p> <p><b>Definition:</b> Chest pain.</p> <p>This condition is the result of reduced oxygen supply to the heart muscle (myocardium). It can be caused by diseased or narrowed arteries which reduce blood flow. Angina is often brought on by exertion or stress, and rarely lasts longer than 3 to 5 minutes.</p> <p><b>Signs and symptoms</b></p> <ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Shortness of breath</li> <li>• Profuse sweating</li> <li>• Light-headedness</li> <li>• Palpitations (sensation of throbbing or fluttering of the heart)</li> <li>• Nausea, vomiting</li> <li>• Pale, cool, moist skin</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 15-8</p>	<div> <p><b>It is impossible to distinguish between angina and the pain of a heart attack. Though it does not cause permanent damage to the heart, angina can eventually lead to a heart attack.</b></p> </div> <p><b>Pre-hospital treatment for angina pectoris</b> Pre-hospital treatment is the same as for myocardial infarction.</p> <p><b>2.3 Congestive Heart Failure</b></p> <div> <p><b>Definition:</b> A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.</p> </div> <p>This condition is called “congestive” because the fluids congest, or clog, the organs. Congestive heart failure is often a complication of myocardial infarction, and can also be brought on by diseased heart valves, hypertension and pulmonary diseases such as emphysema.</p> <p><b>Signs and symptoms of congestive heart failure</b></p> <ul style="list-style-type: none"> <li>• Shortness of breath, made worse by lying flat</li> <li>• Rapid heart rate</li> <li>• Anxiety</li> <li>• Increased respiratory rate</li> <li>• Normal to high blood pressure</li> <li>• Jugular vein distension</li> <li>• Swollen ankles</li> <li>• Cyanosis</li> </ul> <div> <p><b>The patient with congestive heart failure may not always experience chest pain.</b></p> </div>	
<p>TR 15-9</p>		
<p>TR 15-10</p>		





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 15-11</p> <p>TR 15-12</p> <p>TR 15-13</p>	<p><b>Pre-hospital treatment for congestive heart failure</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Maintain open airway and monitor breathing. Provide artificial ventilation if needed.</li> <li>2) Place the responsive patient in a comfortable position, usually sitting upright.</li> <li>3) Give oxygen per local protocol.</li> <li>4) Continuously monitor the patient and provide emotional support.</li> </ol> <p>Transport the patient as soon as possible.</p> <p><b>2.5 Hypertension</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Blood pressure that remains consistently above the normal values.</p> </div> <p><b>Signs and Symptoms</b></p> <ul style="list-style-type: none"> <li>• Headache</li> <li>• Feeling of sickness</li> <li>• Anxiety</li> <li>• Ringing in the ears</li> <li>• Seeing “stars”</li> <li>• Nosebleed</li> <li>• Diastolic blood pressure above 90 mmHg.</li> <li>• Tingling in the face or extremities</li> </ul> <p><b>Pre-hospital treatment for hypertension</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Maintain open airway.</li> <li>2) Place the responsive patient in a comfortable position, usually sitting upright.</li> <li>3) Provide emotional support.</li> <li>4) Control nosebleed, if applicable.</li> </ol> <p>Transport the patient as soon as possible.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 15-14</p>	<h3>3. Abdominal Distress</h3> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Sharp, severe abdominal pain.</p> </div> <p>Abdominal pain can have sudden onset or build up gradually over a period of time. Severe abdominal pain may not always reflect a serious condition, but must always be treated as serious by the MFR until a full diagnosis is made by a doctor.</p> <p><b>&lt;Review organs/anatomy of the abdomen. Refer to hollow and solid organs (Lesson 4).&gt;</b></p> <p><b>Causes of abdominal distress</b></p> <p>There are multiple causes of abdominal pain, all requiring immediate attention. These disorders have four general causes: inflammation, infection, obstruction and haemorrhage. These conditions can be brought on by, but are not limited to, the following:</p> <div> <ul style="list-style-type: none"> <li>• Acute appendicitis</li> <li>• Perforated ulcer</li> <li>• Intestinal obstruction</li> <li>• Ectopic pregnancy or other gynaecological emergencies</li> <li>• Closed abdominal trauma (ruptures, haemorrhages)</li> </ul> </div> <p>This list does not include all causes of abdominal pain.</p> <p><b>Signs and symptoms of abdominal distress</b></p> <div> <ul style="list-style-type: none"> <li>• Abdominal pain, local or diffuse</li> <li>• Colicky pain (cramps that occur in waves)</li> <li>• Abdominal tenderness, local or diffuse</li> <li>• Anxiety, reluctance to move</li> <li>• Loss of appetite, nausea, vomiting</li> <li>• Fever</li> <li>• Rigid, tense, or distended abdomen</li> <li>• Signs of shock</li> <li>• Vomiting blood, bright red or dark brown, resembling coffee grounds</li> <li>• Blood in stool, bright red or tarry black</li> </ul> </div> <p>Many times a patient with abdominal pain will be found in a guarding position.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment of abdominal distress</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"><li>1) Maintain open airway and prevent aspiration of vomit. Have patient lie in comfortable position, preferably the left side if nauseated.</li><li>2) Administer oxygen per local protocol.</li><li>3) Treat for shock.</li><li>4) Do not give anything by mouth.</li><li>5) Keep a vomit sample for analysis (take precautions to prevent contamination).</li><li>6) Continually monitor vital signs while transporting the patient.</li></ol> <hr/> <p><b><i>III. REVIEW</i></b></p> <p>Review objectives from page 1 and ensure everyone has understood them clearly. Answer any questions on lesson content.</p> <hr/> <p><b><i>IV. EVALUATION</i></b></p> <p>Fill out evaluation form.</p> <hr/> <p><b><i>V. CLOSE</i></b></p> <ol style="list-style-type: none"><li>1) Explanations, comments, suggestions</li><li>2) Thank the participants and announce the next lesson.</li></ol>	



## **Lesson 15**

### **Post-Test**

### **Medical Emergencies, Part 1:**

### **Myocardial Infarction, Angina Pectoris, Congestive Heart Failure, Hypertension and Abdominal Distress**

**1. Define a medical emergency.**

*A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.*

**2. Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.**

**Definition:** *Literally meaning “death of the heart”, when blood to part of the heart is blocked off or greatly reduced, that part dies.*

**Signs and symptoms**

- *Chest discomfort, such as pain or heaviness. The common location is substernal, radiating to the neck, jaw, left shoulder and/or left arm.*
- *Abnormal pulse*
- *Nausea or vomiting*
- *Shortness of breath*
- *Difficulty breathing or rapid, shallow respirations*
- *Sudden onset of weakness*
- *Anxiety*
- *Syncope (fainting)*
- *Profuse sweating without a clear cause*

**Pre-hospital treatment**

- 1) Instruct the patient to stop all movement.*
- 2) Place the responsive patient in a comfortable position, usually semi-reclining or sitting.*
- 3) Maintain open airway.*
- 4) Administer oxygen per local protocol. If needed, provide artificial ventilation or CPR.*
- 5) Loosen restrictive clothing.*
- 6) Maintain body temperature as close to normal as possible.*
- 7) Comfort and reassure the patient.*
- 8) Constantly monitor the patient’s vital signs.*



## **Post-Test Lesson 15 (cont'd.)**

### **3. Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.**

*Pain in the chest.*

#### **Signs and symptoms**

- *Shortness of breath*
- *Profuse sweating*
- *Light-headedness*
- *Palpitations (sensation of throbbing or fluttering of the heart)*
- *Nausea, vomiting*
- *Pale, cool, moist skin*

#### **Pre-hospital treatment**

*The same as for myocardial infarction.*

### **4. Define congestive heart failure, list eight signs and symptoms, and list four steps for pre-hospital treatment.**

*A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.*

#### **Signs and symptoms**

- *Shortness of breath, made worse by lying flat*
- *Rapid heart rate*
- *Anxiety*
- *Increased respiratory rate*
- *Normal to high blood pressure*
- *Jugular vein distension*
- *Swollen ankles*
- *Cyanosis*

#### **Pre-hospital treatment**

- 1) *Maintain open airway and monitor breathing. Provide artificial ventilation if needed.*
- 2) *Place the responsive patient in a comfortable position, usually sitting upright.*
- 3) *Give oxygen per local protocol.*
- 4) *Continuously monitor the patient and provide emotional support.*



## Post-Test

### Lesson 15 (cont'd.)

5. Define hypertension, list five signs and symptoms and list five steps for pre-hospital treatment.

*Blood pressure that remains constantly above the normal values.*

#### Signs and symptoms

- *Migraine headache*
- *Sickness*
- *Anxiety*
- *ringing in the ears*
- *“Seeing stars”*
- *Nosebleed (epistaxis)*
- *Diastolic blood pressure above 90 mmHg.*
- *Tingling in the face or extremities*

#### Pre-hospital treatment for hypertension

- 1) *Maintain open airway.*
- 2) *Place the responsive patient in a comfortable position, usually sitting upright.*
- 3) *Provide emotional support.*
- 4) *Control nosebleed, if present.*
- 5) *Transport the patient.*

- 6) List ten signs and symptoms for abdominal pain and list five steps for pre-hospital treatment.

#### Signs and symptoms

- *Abdominal pain, local or diffuse.*
- *Colicky pain (cramps that occur in waves).*
- *Abdominal tenderness, local or diffuse.*
- *Anxiety, reluctance to move.*
- *Loss of appetite, nausea, vomiting.*
- *Fever.*
- *Rigid, tense, or distended abdomen.*
- *Signs of shock.*
- *Vomiting blood, bright red or like coffee grounds.*
- *Blood in stool, bright red or tarry black.*

#### Pre-hospital treatment

- 1) *Maintain open airway and prevent aspiration of vomit. Have patient lie in comfortable position, preferably the left side if nauseated.*
- 2) *Administer oxygen per local protocol.*
- 3) *Treat for shock.*
- 4) *Do not give anything by mouth.*
- 5) *Keep a vomit sample for analysis (take precautions to prevent contamination).*

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## Medical Emergency Signs

Changes in:

- Mental status
- Heart rate, rhythm and/or quality
- Breathing rate, rhythm, and/or quality

*more ...*

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2

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*...cont'd.*

## Medical Emergency Signs

Changes in:

- Skin temperature, colour and/or condition
- Pupil size, symmetry, reactivity to light
- Condition and colour of mucous membranes

*more ...*

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3

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*...cont'd.*

## Medical Emergency Signs

- Breath scent
- Muscular activity
- Vomiting

*more ...*

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## Medical Emergency Symptoms

- Pain
- Fever
- Stomach discomfort, nausea, atypical bowel or bladder activity

*more ...*

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5

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*...cont'd.*

## Medical Emergency Symptoms

- Vertigo, fainting sensation, feeling of impending doom
- Shortness of breath or difficulty breathing
- Chest or abdominal pain

*more ...*

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6

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*...cont'd.*

## Medical Emergency Symptoms

- Excessive thirst, hunger or strange taste in the mouth
- Sensation of numbness and/or tingling

*more ...*

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## Myocardial Infarction

Signs and symptoms

- Discomfort in the chest
- Abnormal pulse
- Nausea or vomiting
- Shortness of breath
- Difficulty breathing

*more ...*

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8

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*...cont'd.*

## Myocardial Infarction

Signs and symptoms

- Sudden weakness
- Anxiety
- Fainting
- Profuse sweating

*more ...*

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1

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## Lesson 15 Objectives

- 1) Define a medical emergency.
- 2) Define myocardial infarction, list nine signs and symptoms, and list eight steps for pre-hospital treatment.

*more...*

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*...cont'd.*

## Lesson 15 Objectives

- 3) Define angina pectoris, list six signs and symptoms, and describe pre-hospital treatment.
- 4) Define congestive heart failure, list eight signs and symptoms, and four steps for pre-hospital treatment.

*more*

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3

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*...cont'd.*

## Lesson 15 Objectives

- 5) Define hypertension, list five signs and symptoms and five steps for pre-hospital treatment.
- 6) List ten signs and symptoms of abdominal pain and list five steps for pre-hospital treatment.

*more*

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## Medical Emergency

A critical state caused by a wide variety of illnesses whose cause does not include trauma to the patient.

*more*

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## Most Common Cardiovascular Medical Emergencies

- Myocardial infarction
- Angina pectoris
- Congestive heart failure
- Cerebral vascular accident
- Hypertension

*more*

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6

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## Myocardial Infarction

Literally meaning "death of the heart," when blood to part of the heart is blocked off or greatly reduced, that part dies.

*more*

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## Angina Pectoris

Chest pain.

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## Congestive Heart Failure

A condition of excessive fluid build-up in the lungs and/or other organs due to inadequate pumping of the heart.

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## Congestive Heart Failure

*Signs and symptoms*

- Shortness of breath, made worse by lying flat
- Rapid heart rate
- Anxiety
- Increased respiratory rate

*more...*

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...cont'd.

## Congestive Heart Failure

*Signs and Symptoms*

- Normal to high blood pressure
- Jugular vein distension
- Swollen ankles
- Cyanosis

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## Hypertension

Blood pressure that remains consistently above the normal values.

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## Hypertension

*Signs and symptoms*

- Headache
- Feeling of sickness
- Anxiety
- Ringing of the ears

*more...*

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...cont'd.

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## Hypertension

### *Signs and Symptoms*

- “Seeing stars”
- Nosebleed
- Diastolic blood pressure above 90 mmHg.
- Tingling in the face or extremities

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## Abdominal Distress

Sharp, severe abdominal pain.

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## Causes of Abdominal Distress

- Acute appendicitis
- Perforated ulcer
- Intestinal obstruction

more...

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16

...cont'd.

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## Causes of Abdominal Distress

- Ectopic pregnancy or other gynaecological emergencies
- Closed abdominal trauma (ruptures, haemorrhages)

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## Abdominal Distress

### *Signs and Symptoms*

- Abdominal pain, local or diffuse
- Colicky pain (cramps that occur in waves)
- Abdominal tenderness, local or diffuse

more...

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18

...cont'd.

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## Abdominal Distress

### *Signs and Symptoms*

- Anxiety, reluctance to move
- Loss of appetite, nausea, vomiting
- Fever
- Rigid, tense, or distended abdomen

more...

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...cont'd.

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## **Abdominal Distress**

### *Signs and Symptoms*

- Signs of shock
- Vomiting blood, bright red or dark brown, resembling coffee grounds
- Blood in stool, bright red or tarry black

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TR-15-19



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## **Medical First Responder Course**

# **Lesson Plan 16**

## **Medical Emergencies, Part 2:**

### **Respiratory Emergencies**

Approximate Duration: 1 hour, 15 minutes

Materials:

- Transparencies
- Flipcharts
- Handout 16-1

#### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

1. Define respiratory distress.
2. List four causes of respiratory distress.
3. List seven signs and symptoms of respiratory distress.
4. List five steps for pre-hospital treatment of respiratory distress.
5. List eight signs and symptoms of toxic product inhalation.
6. List five steps for pre-hospital treatment of toxic product inhalation.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 16-1 TR 16-2	<p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce the instructor and assistant.</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives.</li> </ol>	
TR 16-3	<p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Respiratory Distress</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Shortness of breath or a feeling of air hunger with laboured breathing.</p> </div> <p>Respiratory distress affects one's ability to exchange oxygen and carbon dioxide. Respiratory medical emergencies have common signs and symptoms inherent to all types of breathing difficulties. Respiratory distress is characterised by quick, laboured breathing, shortness of breath and the sensation of unavailable air. It can produce a blue coloration of the skin and mucous membranes.</p>	
FC 16-1	<p><b>Signs and symptoms of respiratory distress</b></p> <ul style="list-style-type: none"> <li>• Inability to speak in full sentences without pausing to breathe</li> <li>• Noisy breathing</li> <li>• Use of accessory muscles to breathe</li> <li>• Tripod positioning, leaning forward, sitting upright</li> </ul>	
FC 16-2	<ul style="list-style-type: none"> <li>• Abnormal breathing rate or pattern</li> <li>• Increased pulse rate</li> <li>• Poor skin colour (cyanotic, pale, or ashen)</li> </ul>	
TR 16-4	<p><b>Pre-hospital treatment for respiratory distress</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Move the patient away from the contaminated area (if the cause is toxic product inhalation).</li> <li>2) Assess patient's breathing to determine if adequate. Provide artificial ventilation if needed. Maintain open airway.</li> <li>3) Position the responsive patient in a comfortable position, usually sitting upright.</li> <li>4) Administer oxygen per local protocol.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 16-5	<p>5) Comfort and reassure the patient by providing emotional support.</p> <p>Transport the patient as soon as possible.</p> <h2>2. Causes of Medical Respiratory Distress</h2> <p>The following conditions are among the more common respiratory problems you will encounter in the field. It is not necessary to diagnose a patient's condition; in fact, the care for all respiratory conditions is essentially the same for the medical first responder.</p>	
FC 16-3	<ul style="list-style-type: none"><li>• <b>Bronchial Asthma</b> <p>Bronchial asthma is an <u>episodic</u> illness characterised by the narrowing of the large air passages called the bronchi. The patient experiences difficulty <u>exhaling air out of</u> the lungs. This is usually due to a spasm of thin muscle that lines the bronchial walls. Asthma is generally triggered by allergens, strong scents, irritating gases, smoke and weather changes.</p></li><li>• <b>Chronic Obstructive Pulmonary Disease (COPD)</b> <p>Emphysema and chronic bronchitis are the most common forms of COPD. Emphysema causes the alveoli to lose their <u>elastic properties</u> and become distended. This traps air and prevents the alveoli from working correctly. As more and more alveoli become affected, breathing becomes increasingly difficult for the patient. Chronic bronchitis is characterised by excessive mucus becoming trapped in the large air passages of the bronchial tree. Patients diagnosed with this condition will suffer from a <u>consistent productive cough</u>. Patients who have COPD usually have a history of smoking; however, it is also common among people who live in areas of high air pollution.</p></li></ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 16-6</p>	<ul style="list-style-type: none"> <li>• <b>Anaphylaxis</b></li> </ul> <p>Anaphylaxis is an acute, severe <b>allergic</b> reaction that puts the patient's life in immediate danger. The reaction may be triggered by many different routes of exposure, including direct skin contact, ingestion, and inhalation. Exposure to the allergen will cause blood vessels to dilate rapidly and cause a <b>drop</b> in blood pressure (hypotension). Many tissues may swell, including those lining the respiratory system. This swelling can <b>obstruct the airway</b>, leading to respiratory failure. Signs and symptoms frequently observed are urticaria, oedema in the face, lips and neck. In extreme cases, oedema can appear in the larynx and glottis making it difficult for the patient to breathe.</p> <p><b>Anaphylactic Shock</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> A life-threatening reaction of the body caused by something to which the patient is extremely allergic.</p> </div> <p>This condition represents a true emergency where immediate transportation to a medical centre is imperative.</p> <p><b>Causes of anaphylactic shock</b></p> <ul style="list-style-type: none"> <li>• Insect stings, including wasps and bees, ant bites</li> <li>• Foods and spices (especially shellfish)</li> <li>• Inhaled substances, including dust and pollen</li> <li>• Chemicals inhaled or in contact with the skin</li> <li>• Medications injected or taken by mouth, such as penicillin</li> </ul> <p><b>Signs of anaphylactic shock</b></p> <ul style="list-style-type: none"> <li>• Skin: May be swollen with burning and itching. Face and tongue may also be swollen (oedema).</li> <li>• Breathing: Difficult and rapid breathing with possible wheezing.</li> <li>• Pulse: Rapid, weak or not detected.</li> <li>• State of consciousness: The patient may be restless and often becomes unconscious.</li> </ul>	
<p>TR 16-7</p>		
<p>TR 16-8</p>		





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 16-9</p> <p>NOTE</p> <p>NOTE</p>	<p><b>Pre-hospital treatment for anaphylactic shock</b></p> <p>When interviewing the patient, ask about allergies to anything and if he or she was in contact with that substance.</p> <p>As with any type of shock treat the patient with total care (see pre-hospital treatment for shock).</p> <p>The patient needs medications to combat the allergic reaction. Transport the patient immediately.</p> <ul style="list-style-type: none"> <li> <p><b>Hyperventilation</b></p> <p>Hyperventilation is a condition characterised by breathing too fast. It is normal for most people, such as when they are frightened, as long as the rate of breathing quickly returns to normal.</p> <p>Hyperventilation syndrome is an abnormal state in which rapid breathing persists. It is commonly associated with <b>anxiety</b>. Symptoms include rapid and deep breathing, chest pain, dizziness, faintness, and numbness around the mouth, hands and feet. Not every patient who is breathing rapidly or <b>deeply</b> is hyperventilating. Several serious conditions may be the cause, including fever, infections, trauma, diabetes or overdose.</p> <p>Hyperventilation is a relatively common respiratory emergency that can often be corrected by <b>reassuring the patient and providing emotional support</b>. If the patient does not respond immediately, administer oxygen per local protocol; this will not make hyperventilation worse.</p> <p><b>&lt;Briefly discuss the pathophysiology of hyperventilation syndrome as needed.&gt;</b></p> <p>Avoid using the traditional method of treating anxiety-induced hyperventilation by having the patient to breathe into a paper bag. Caution should be exercised when using this technique. Remember to allow the patient to receive enough oxygen.</p> <p><b>&lt;Advise the participants that if the hyperventilation is due to a more serious condition, using a bag could be disastrous.&gt;</b></p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p><b>If breathing does not improve with the explained measures, assume that the problem is more serious.</b></p> </div> </li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 16-10</p> <p>TR 16-11</p> <p>TR 16-12</p> <p>TR 16-13</p>	<h3>3. Toxic Product Inhalation</h3> <p>Many fire-related deaths are due to problems associated with the inhalation of toxic products of combustion rather than from burns. Patients can be affected by combustion in two different ways: <b>pulmonary thermal injury</b> (burning of the airways) and <b>toxic product inhalation</b>, to which the body's response varies depending on the poison involved. Fluid in the lungs (oedema) may develop from pulmonary thermal injury when surrounding temperatures exceed 50°C (120°F). Carbon monoxide and ammonia are common examples of inhaled toxic products. A good initial assessment and history of the exposure are important findings in the smoke-inhalation patient. The reaction to toxic gases can appear immediately or hours after the inhalation.</p> <p><b>Signs and symptoms of toxic product inhalation</b></p> <ul style="list-style-type: none"> <li>• Irritation and inflammation of air passages, eyes and nose</li> <li>• Altered frequency and depth of breathing</li> <li>• Possible cardio-respiratory arrest</li> <li>• Singed nasal hairs</li> <li>• Dusty grey spittle</li> <li>• Wheezing and noisy breathing</li> <li>• Coughing</li> <li>• Hoarseness</li> </ul> <p><b>Pre-hospital treatment for toxic product inhalation</b></p> <p>Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Remove the patient from the contaminated area.</li> <li>2) Conduct initial assessment and apply basic life support as necessary.</li> <li>3) If the patient is breathing and does not have any signs of neck or spinal trauma, place the patient in a comfortable seated position.</li> <li>4) Administer oxygen per local protocol.</li> <li>5) Treat for shock.</li> </ol> <p>Transport the patient as soon as possible.</p> <hr/> <p><b>III. REVIEW</b></p> <ol style="list-style-type: none"> <li>1) Define respiratory distress, explain the signs and symptoms and describe pre-hospital treatment.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<div><div><div>2) List at least three causes of breathing difficulty.</div><div>3) List the signs and symptoms and describe the pre-hospital treatment of smoke inhalation.</div></div><div><hr/></div><div><b><i>IV. EVALUATION</i></b></div><div><div>1) Fill out the evaluation form.</div><div>2) Verify the successful achievement of the objectives.</div></div><div><hr/></div><div><b><i>V. CLOSE</i></b></div><div><div>1) Explanations, comments, suggestions</div><div>2) Thank the participants and announce the next lesson.</div></div></div>	



## Lesson 16

### Post-Test

# Respiratory Emergencies

1. Define respiratory distress.

*Shortness of breath or a feeling of air hunger with laboured breathing.*

2. List four causes of respiratory distress.

- *Bronchial asthma*
- *Chronic obstructive pulmonary disorders (COPD)*
- *Anaphylaxis*
- *Hyperventilation*

3. List seven signs and symptoms of respiratory distress.

- *Inability to speak in full sentences without pausing to breathe*
- *Noisy breathing*
- *Use of accessory muscles to breathe*
- *Tripod positioning, leaning forward, sitting upright*
- *Abnormal breathing rate or pattern*
- *Increased pulse rate*
- *Poor skin colour (cyanotic, pale, or ashen)*

4. List five steps for pre-hospital treatment of respiratory distress.

- 1) *Move the patient away from the contaminated area (if the cause is toxic product inhalation).*
- 2) *Assess patient's breathing to determine if adequate. Provide artificial ventilation if needed. Maintain open airway.*
- 3) *Position the responsive patient in a comfortable position, usually sitting upright.*
- 4) *Administer oxygen per local protocol.*
- 5) *Comfort and reassure the patient by providing emotional support.*

5. List eight signs and symptoms of toxic product inhalation.

- *Irritation and inflammation of air passages, eyes and nose*
- *Altered frequency and depth of breathing*
- *Possible cardio-respiratory arrest*
- *Singed nasal hairs*
- *Dusty grey spittle*
- *Wheezing and noisy breathing*
- *Coughing*
- *Hoarseness*



## **Lesson 16**

### **Post-Test (cont'd.)**

6. List five steps for pre-hospital treatment of toxic product inhalation.
  - 1) *Remove the patient from the contaminated area.*
  - 2) *Conduct initial assessment and apply basic life support as necessary.*
  - 3) *If the patient is breathing and does not have any signs of trauma to the neck or back, place the patient in a comfortable seated position.*
  - 4) *Administer oxygen per local protocol.*
  - 5) *Treat for shock.*

1

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## **Respiratory Distress**

**Signs and symptoms**

- Inability to speak in full sentences without pausing to breathe
- Noisy breathing
- Use of accessory muscles to breathe

*more ...*

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*...cont'd.*

## **Respiratory Distress**

**Signs and symptoms**

- Tripod positioning, leaning forward, sitting upright
- Abnormal breathing rate or pattern
- Increased pulse rate
- Poor skin colour (cyanotic, pale, or ashen)

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## **Causes of Respiratory Distress**

- Bronchial asthma
- Chronic Obstructive Pulmonary Disease (COPD)
- Anaphylaxis
- Hyperventilation

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## Lesson 16 Objectives

1. Define respiratory distress.
2. List four causes of respiratory distress.
3. List seven signs and symptoms of respiratory distress.

*more ...*

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*...cont'd.*

## Lesson 16 Objectives

4. List five steps for pre-hospital treatment of respiratory distress.
5. List eight signs and symptoms of toxic product inhalation.
6. List five steps for pre-hospital treatment of toxic product inhalation.

*more ...*

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## Respiratory Distress

Shortness of breath or a feeling of air hunger with laboured breathing.

*more ...*

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## Respiratory Distress

### *Pre-hospital Treatment*

- 1) Move the patient away from the contaminated area
- 2) Assess patient's breathing to determine if adequate
- 3) Position the responsive patient in a comfortable position

*more ...*

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*...cont'd.*

## Respiratory Distress

### *Pre-hospital Treatment*

- 4) Administer oxygen per local protocol.
- 5) Comfort and reassure the patient by providing emotional support.

Transport the patient as soon as possible.

*more ...*

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## Anaphylactic Shock

A life-threatening reaction of the body caused by something to which the patient is extremely allergic

*more ...*

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## Causes of Anaphylactic Shock

- Insect bites, including wasp and bee stings
- Foods and spices (especially shellfish)
- Inhaled substances, including dust and pollen

*MORE ...*

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8

...cont'd. Medical First Responder Course

## Causes of Anaphylactic Shock

- Chemicals inhaled or in contact with the skin
- Medications injected or taken by mouth, including penicillin

*MORE ...*

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## Hyperventilation

- Calm and reassure the patient
- Administer oxygen per local protocol
- Use caution if using the paper bag method

*MORE ...*

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## Toxic Product Inhalation

### *Signs and Symptoms*

- Irritation and inflammation of air passages, eyes and nose
- Altered frequency and depth of breathing
- Possible cardio-respiratory arrest

*MORE ...*

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...cont'd. Medical First Responder Course

## Toxic Product Inhalation

### *Signs and Symptoms*

- Singed nasal hairs
- Dusty grey spittle
- Wheezing and noisy breathing
- Coughing
- Hoarseness

*MORE ...*

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## Toxic Product Inhalation

### *Pre-hospital Treatment*

- 1) Remove the patient from the contaminated area.
- 2) Conduct initial assessment and apply basic life support as necessary.

*MORE ...*

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...cont'd.

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## Toxic Product Inhalation

### *Pre-hospital Treatment*

- 3) If the patient is breathing and does not have any signs of neck or spinal trauma, place the patient in a comfortable seated position.
- 4) Administer oxygen per local protocol.
- 5) Treat for shock.

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TR-16-13



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## **Medical First Responder Course**

# **Lesson Plan 17**

## **Medical Emergencies, Part 3:**

### **Seizures, Diabetic Emergencies and Cerebral Vascular Accidents**

**Approximate Duration:** 2 hours

**Materials:**

- Transparencies
- Handout

#### **OBJECTIVES**

Upon completion of this lesson, you will be able to:

- 1) Define seizure.
- 2) List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.
- 3) List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.
- 4) List seven signs and symptoms of hyperglycaemia and list three steps for pre-hospital treatment.
- 5) List nine signs and symptoms of hypoglycaemia and describe pre-hospital treatment.
- 6) List nine signs and symptoms for a cerebral-vascular accident (CVA).

Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 17-1 TR 17-2 TR 17-3	<p><b>I. INTRODUCTION</b></p> <ol style="list-style-type: none"> <li>1. Introduction of instructor and assistants.</li> <li>2. Introduction of lesson.</li> <li>3. Present lesson objectives (ask participants to read them aloud).</li> </ol> <hr/> <p><b>II. DEVELOPMENT</b></p> <p>This lesson deals with conditions which cause altered mental status in which patients are found to be confused or disoriented. Altered mental status is most commonly associated with seizures, diabetic emergencies and cerebral vascular accidents (CVA).</p> <p><b>1. Seizures</b></p> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> A sudden and temporary change in mental status caused by massive electrical discharge in the brain.</p> </div> <p>Seizures are caused by a <u>nervous</u> system malfunction. If the normal functions of the brain are upset, its electrical activity can become irregular. A seizure can cause a sudden change in a person's sensations, behaviour and/or movements. Some seizures involve uncontrolled muscular movements called <u>convulsions</u>. Having seizures is not a disease in itself, but rather a sign of some underlying defect, injury or disease.</p> <p><b>Causes of seizures</b></p> <ul style="list-style-type: none"> <li>Failure to take anti-seizure medication</li> <li>Chronic medical conditions</li> <li>Epilepsy</li> <li>Hypoglycaemia</li> <li>Poisoning, including alcohol and drug poisoning</li> <li>Cerebral vascular accident (CVA)</li> <li>Fever (most common in children under age 6)</li> <li>Infection</li> <li>Head injury or brain tumours</li> <li>Hypoxia (decreased levels of oxygen in the blood)</li> <li>Eclampsia (a severe complication of pregnancy)</li> </ul> <p>This lesson will cover three of the more common causes of seizures, including epilepsy, fever, and head trauma.</p>	
TR 17-4		
TR 17-5		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Epilepsy</b></p> <p>Epilepsy is an <b>organic</b> neurological illness, perhaps the best known of the conditions that causes seizures. Some people are born with it and others develop it after a head injury or surgery. Conscientious use of medication allows most epileptics to live normal lives without seizures. Epilepsy is an organic illness that can present itself in different forms. Some episodes of convulsions are very pronounced (<i>grand mal</i>) and some convulsions are almost undetectable (<i>absence</i> or <i>petit mal</i>). An epileptic convulsive episode can repeat itself an indefinite number of times.</p> <p><b>Febrile seizure</b></p> <p>Fever is a common cause of seizures in children less than <b>6</b> years of age. It is the rapid rise in body temperature, rather than the temperature itself, that causes the seizure. It can repeat itself many times. All children who have suffered a seizure require medical evaluation.</p> <p><b>Head trauma</b></p> <p>A patient with a brain injury may have a seizure immediately or it might be delayed. A haematoma may form inside the skull, causing increased pressure and resulting in a seizure. It is very important to obtain a thorough patient history to determine whether the patient has fallen or received any type of head trauma.</p> <p><b>Signs and symptoms of a seizure</b></p> <p>The most common type of seizure you will respond to is a <i>grand mal</i>, or generalized seizure. There are four phases in this type of seizure:</p>	
TR 17-6	<ul style="list-style-type: none"> <li>• <b>Aura phase:</b> The patient becomes <b>aware</b> that the seizure is coming on, usually described as an unusual smell or flash of light, usually lasting only a second.</li> </ul>	
TR 17-7	<ul style="list-style-type: none"> <li>• <b>Tonic phase:</b> Patient becomes <b>unresponsive</b> and collapses. All the muscles of the body contract. The body becomes rigid and the patient may stop breathing. May become incontinent.</li> </ul>	
TR 17-8	<ul style="list-style-type: none"> <li>• <b>Clonic phase:</b> The patient convulses violently. May foam at the mouth or drool, and may become cyanotic.</li> </ul>	
TR 17-9	<ul style="list-style-type: none"> <li>• <b>Postictal phase:</b> Begins when convulsions <b>stop</b>. Patient gradually regains consciousness. Headache is common.</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p>Other common signs and symptoms for less severe seizures:</p> <ul style="list-style-type: none"> <li>• Temporary loss of concentration or awareness</li> <li>• Atypical behaviour</li> <li>• Tingling, stiffening or jerking in one part of the body, which may later spread</li> </ul> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p><b>A continuous seizure, or two or more seizures without a period of responsiveness is called <i>status epilepticus</i>. This is considered a true medical emergency, and can be fatal. Transport the patient immediately.</b></p> </div> <p><b>Pre-hospital treatment for seizures</b></p> <p>Use universal precautions and secure the scene. If you arrive <b>while the patient is still having a seizure</b>, begin at Step 1:</p> <ol style="list-style-type: none"> <li>1) Place patient gently on the floor and move any objects that patient might strike.</li> <li>2) Stay calm and wait. Do not force anything into the patient's mouth. The seizure should be over in a few minutes.</li> <li>3) Loosen restrictive clothing. Do not restrain patient.</li> <li>4) Place the patient on his/her side to prevent aspiration.</li> </ol> <p>If you arrive <b>after the seizure is over</b>, begin at Step 5:</p> <ol style="list-style-type: none"> <li>5) Assess and monitor airway and breathing.</li> <li>6) Treat any injuries the patient may have sustained during convulsions.</li> <li>7) Place the patient in recovery (if you do not suspect spinal injury).</li> <li>8) Administer oxygen per local protocol.</li> <li>9) Comfort and reassure the patient.</li> </ol> <p>For febrile seizures in children, lower the patient's temperature with tepid water with a bath sponge or washcloth. Transport the patient.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>TR 17-10</b></p> <p><b>TR 17-11</b></p>	<h2>2. Diabetic Emergencies</h2> <p><b>&lt;Explain the basics of diabetes and the function of glucose and insulin in the body.&gt;</b></p> <p>Diabetes is an illness caused by deficient production of insulin in the body. Your job as an MFR is not to diagnose or treat diabetes, but rather to <b>identify</b> and <b>treat</b> the conditions caused by improper management of diabetes. These conditions are known as <b>hyperglycaemia</b> (high blood sugar) and <b>hypoglycaemia</b> (low blood sugar). The most common indication that the patient may have either of these conditions is <b>altered mental status</b>. Other clues, such as a necklace, bracelet, medication or information provided by others, may also provide vital information.</p> <p>Some hyperglycaemic and hypoglycaemic patients may appear to be alcohol-intoxicated. Always suspect a diabetic problem even in cases that appear to be only alcohol- or drug-related. As we will also see, blood sugar problems are not always related to a diabetic condition.</p> <h3>2.1 Hyperglycaemia</h3> <p>Diabetics may suffer from increased blood sugar, or hyperglycaemia. This condition is basically one of too much sugar and too little insulin. Common causes of hyperglycaemia include:</p> <ul style="list-style-type: none"> <li>• Infection</li> <li>• Failure of patient to take insulin, or takes insufficient amount</li> <li>• Eating excessive sugar</li> <li>• Increased or prolonged stress</li> </ul> <p><b>Signs and symptoms of hyperglycaemia</b></p> <ul style="list-style-type: none"> <li>• Gradual onset</li> <li>• Sweet, fruity breath</li> <li>• Flushed, dry skin</li> <li>• Hunger or thirst</li> <li>• Rapid weak pulse</li> <li>• Frequent urination</li> <li>• Intoxicated appearance, staggering, slurred speech</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 17-12</p> <p>TR 17-13</p>	<p>The onset of severe hyperglycaemia is <b><i>gradual</i></b>. In most cases it develops over a period of <b><i>12 to 24</i></b> hours. At first, the patient experiences excessive hunger, thirst, and urination. The patient appears extremely ill, becoming weaker and worsening as the condition progresses. If left untreated, the patient may die. Even with treatment, recovery is also <b><i>gradual</i></b>, occurring 6 to 12 hours after insulin and intravenous fluid are administered. A hyperglycaemic emergency is also called a <b><i>diabetic coma</i></b>, although the patient is not usually found in a coma.</p> <p><b>Pre-hospital treatment for hyperglycaemia</b></p> <p>Use universal precautions, secure the scene and alert local EMS. Never give patients who cannot control their airways anything to eat or drink.</p> <ol style="list-style-type: none"> <li>1) Perform initial assessment and obtain patient history.</li> <li>2) Administer glucose per local protocol. When in doubt, give sugar.</li> <li>3) Reassess and transport the patient. Position the patient appropriately.</li> </ol> <p><b>2.2 Hypoglycaemia</b></p> <p>This condition consists of <b><i>low blood sugar</i></b>, and can be the result of one or two conditions. One is too much insulin in the bloodstream. The other is too little sugar in the bloodstream. People with diabetes are not the only ones who can suffer from low blood sugar. Alcoholics, anyone having ingested certain poisons, and people who are ill are also at risk. Some common causes of low blood sugar are:</p> <ul style="list-style-type: none"> <li>• Skipped meals, particularly for diabetics</li> <li>• Vomiting, especially with illness</li> <li>• Strenuous exercise</li> <li>• Physical stress from extreme heat or cold</li> <li>• Emotional stress</li> <li>• Accidental overdose of insulin</li> </ul> <p>The onset of severe hypoglycaemia is <b><i>sudden</i></b>. The most recognised cause of hypoglycaemia is the accidental overdose of insulin by a patient with diabetes. After time, diabetes cause visual impairment in patients. This can make it very hard for patients to give themselves the proper amount of insulin. The result is an insulin overdose and hypoglycaemia.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed												
<p>TR 17-14</p> <p>TR 17-15</p> <p>TR 17-16</p>	<p><b>Signs and symptoms of hypoglycaemia</b></p> <ul style="list-style-type: none"> <li>• Rapid onset of altered mental status</li> <li>• Intoxicated appearance, staggering, slurred speech</li> <li>• Atypical behaviour</li> <li>• Combativeness and/or anxiety</li> <li>• Rapid pulse rate</li> <li>• Cool, clammy skin</li> <li>• Hunger</li> <li>• Headache</li> <li>• Seizures</li> </ul> <p><b>Pre-hospital treatment for hypoglycaemia</b></p> <p>Use the same treatment as for hyperglycaemia.</p> <table border="1"> <thead> <tr> <th colspan="3">COMPARISON CHART</th></tr> <tr> <th></th><th>Hyperglycaemia</th><th>Hypoglycaemia</th></tr> </thead> <tbody> <tr> <td><b>Onset</b></td><td>Gradual, over a period of days</td><td>Sudden, within minutes</td></tr> <tr> <td><b>Causes</b></td><td> <ul style="list-style-type: none"> <li>▪ Insulin insufficiency due to failure to take any or enough insulin</li> <li>▪ Eating too much food that contains or produces sugar</li> <li>▪ Infection</li> <li>▪ Stress</li> </ul> </td><td> <ul style="list-style-type: none"> <li>▪ Too much insulin, or inability to adjust to new dosage</li> <li>▪ Inadequate food intake</li> <li>▪ Vomiting</li> <li>▪ Excessive exercise</li> <li>▪ Emotional excitement</li> </ul> </td></tr> </tbody> </table> <p><b>2.4 Cerebral Vascular Accident (CVA)</b></p> <p><b>Definition:</b> A sudden loss of blood supply to the brain.</p> <p>CVA, commonly known as a “stroke,” is also becoming known as “brain attack”.</p> <p><b>Causes</b></p> <ul style="list-style-type: none"> <li>• <b>Cerebral thrombosis:</b> The result of a clot obstructing a cerebral artery, preventing the flow of oxygenated blood to a portion of the brain.</li> </ul>	COMPARISON CHART				Hyperglycaemia	Hypoglycaemia	<b>Onset</b>	Gradual, over a period of days	Sudden, within minutes	<b>Causes</b>	<ul style="list-style-type: none"> <li>▪ Insulin insufficiency due to failure to take any or enough insulin</li> <li>▪ Eating too much food that contains or produces sugar</li> <li>▪ Infection</li> <li>▪ Stress</li> </ul>	<ul style="list-style-type: none"> <li>▪ Too much insulin, or inability to adjust to new dosage</li> <li>▪ Inadequate food intake</li> <li>▪ Vomiting</li> <li>▪ Excessive exercise</li> <li>▪ Emotional excitement</li> </ul>	
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<p>TR 17-17</p> <p>TR 17-18</p>														





Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>TR 17-18</b></p> <p><b>TR 17-19</b></p> <p><b>TR 17-20</b></p> <p><b>TR 17-21</b></p>	<ul style="list-style-type: none"> <li>• <b>Cerebral haemorrhage:</b> The result of a cerebral artery breaking, leaving an area of the brain without blood supply. The blood that comes out of this artery creates intracranial pressure to the brain and interferes in the brain's functions.</li> </ul> <p><b>Signs and symptoms of CVA</b> These vary depending on the location and extent of damage:</p> <ul style="list-style-type: none"> <li>• Headache – may be the first and only symptom</li> <li>• Fainting (syncope)</li> <li>• Altered mental status</li> <li>• Tingling or paralysis of the extremities or face</li> <li>• Difficulty speaking</li> <li>• Blurred vision</li> <li>• Convulsions and/or seizures</li> <li>• Unequal pupils</li> <li>• Loss of bladder or bowel control</li> <li>• Hypertension (high blood pressure)</li> </ul> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>If any one of these signs or symptoms is present, assume that the patient is having or is about to have a cerebral vascular accident.</b></p> <p><b>The risk of having a CVA increases with age.</b></p> </div> <p><b>Pre-hospital treatment for CVA</b> Use universal precautions and secure the scene.</p> <ol style="list-style-type: none"> <li>1) Instruct the patient to stop all movement.</li> <li>2) Place the responsive patient in a comfortable position, usually semi-reclining or sitting.</li> <li>3) Maintain open airway.</li> <li>4) Administer oxygen per local protocol. If needed, provide artificial ventilation or CPR.</li> <li>5) Loosen restrictive clothing.</li> <li>6) Maintain body temperature as close to normal as possible.</li> <li>7) Comfort and reassure the patient.</li> <li>8) Continue to monitor the patient's vital signs.</li> <li>9) When immobilising the patient, protect the paralysed part.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <p><b><i>III. REVIEW</i></b></p> <ol style="list-style-type: none"><li>1) Define seizures.</li><li>2) List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.</li><li>3) List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.</li><li>4) List seven signs and symptoms for hyperglycaemia and list three steps for pre-hospital treatment.</li><li>5) List nine signs and symptoms hypoglycaemia and describe pre-hospital treatment.</li><li>6) List nine signs and symptoms of a cerebral-vascular accident (CVA).</li></ol> <hr/> <p><b><i>IV. EVALUATION</i></b></p> <ol style="list-style-type: none"><li>1) Ask participants to fill out course evaluation.</li><li>2) Verify that the objectives were achieved.</li></ol> <hr/> <p><b><i>V. CLOSE</i></b></p> <p>Thank the participants and announce the next lesson.</p>	



## **Lesson 17**

### **Post-Test**

### **Medical Emergencies, Part 3:**

### **Seizures, Diabetic Emergencies and Cerebral Vascular Accidents**

1. Define seizure.

*A sudden and temporary change in mental status caused by massive electrical discharge in the brain.*

2. List the first four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.
  - 1) *Place patient gently on the floor and move any objects that patient might strike.*
  - 2) *Stay calm and wait. Do not force anything into the patient's mouth. The seizure should be over in a few minutes.*
  - 3) *Loosen restrictive clothing. Do not restrain patient.*
  - 4) *Place the patient on his/her side to prevent aspiration.*
3. List Steps 5 through 9 for the pre-hospital treatment for seizures to take after the seizure is over.
  - 5) *Assess and monitor airway and breathing.*
  - 6) *Treat any injuries the patient may have sustained during convulsions.*
  - 7) *Place the patient in recovery (if you do not suspect spinal injury).*
  - 8) *Administer oxygen per local protocol.*
  - 9) *Comfort and reassure the patient.*

4. List seven signs and symptoms for hyperglycaemia and list three steps for pre-hospital treatment.

#### **Signs and symptoms**

- *Gradual onset*
- *Sweet, fruity breath*
- *Flushed, dry skin*
- *Hunger or thirst*
- *Rapid weak pulse*
- *Frequent urination*
- *Intoxicated appearance, staggering, slurred speech*

#### **Pre-hospital treatment**

- 1) *Perform initial assessment and obtain patient history.*
- 2) *Administer oral glucose per local protocol. When in doubt, give sugar.*
- 3) *Reassess and transport the patient. Position the patient appropriately.*



## Lesson 17

### Post-Test (cont'd.)

- 5) List nine signs and symptoms hypoglycaemia and describe pre-hospital treatment.

#### Signs and symptoms

- *Rapid onset of altered mental status*
- *Intoxicated appearance, staggering, slurred speech*
- *Atypical behaviour*
- *Combateness and/or anxiety*
- *Rapid pulse rate*
- *Cool, clammy skin*
- *Hunger*
- *Headache*
- *Seizures*

#### Pre-hospital treatment

*The same as for hyperglycaemia.*

- 6) List nine signs and symptoms for a cerebral-vascular accident (CVA).

#### Signs and symptoms

- *Headache – may be the first and only symptom.*
- *Fainting (syncope)*
- *Altered level of consciousness*
- *Tingling or paralysis of the extremities or face*
- *Difficulty speaking*
- *Blurred vision*
- *Convulsions*
- *Unequal pupils*
- *Loss of bladder or bowel control*

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Medical First Responder Course

## Lesson 17 Objectives

- 1) Define seizures.
- 2) List four steps for the pre-hospital treatment for seizures when arriving while the patient is still having a seizure.

*more ...*

Rev. Feb.2002 TR17-1

2

...cont'd.

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## Lesson 17 Objectives

- 3) List five additional steps for the pre-hospital treatment for seizures to take after the seizure is over.
- 4) List seven signs and symptoms for hyperglycaemia and list three steps for pre-hospital treatment.

*more ...*

Rev. Feb.2002 TR17-2

3

...cont'd.

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## Lesson 17 Objectives

- 5) List nine signs and symptoms hypoglycaemia and describe pre-hospital treatment.
- 6) List nine signs and symptoms for a cerebral vascular accident (CVA).

*more ...*

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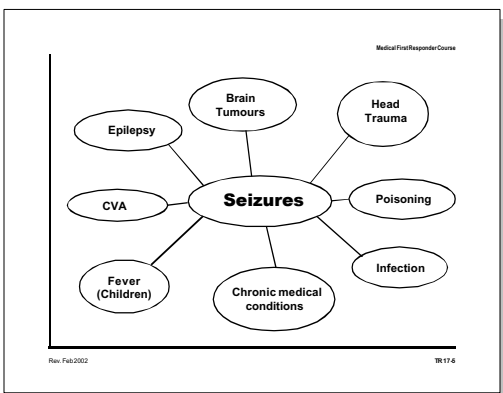
## Seizure

A sudden and temporary change in mental status cause by massive electrical discharge in the brain.

*more ...*

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## Seizures

- **Aura phase:** The patient becomes aware that the seizure is coming on, usually described as an unusual smell or flash of light, usually lasting only a second.

*more ...*

Rev. Feb.2002 TR17-6

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...cont'd.

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## Seizures

- **Tonic phase:** Patient becomes unresponsive and collapses. All the muscles of the body contract. The body becomes rigid and the patient may stop breathing. May become incontinent.

more ...

Rev. Feb.2002 TR 17-7

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...cont'd.

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## Seizures

- **Clonic phase:** The patient convulses violently. May foam at the mouth or drool, and may become cyanotic.

more ...

Rev. Feb.2002 TR 17-8

9

...cont'd.

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## Seizures

- **Postictal phase:** Begins when convulsions stop. Patient gradually regains consciousness. Headache is common.

more ...

Rev. Feb.2002 TR 17-9

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## Hyperglycaemia

### *Signs and symptoms*

- Gradual onset
- Sweet, fruity breath
- Flushed, dry skin
- Hunger or thirst

more ...

Rev. Feb.2002 TR 17-10

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...cont'd.

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## Hyperglycaemia

### *Signs and Symptoms*

- Rapid weak pulse
- Frequent urination
- Intoxicated appearance, staggering, slurred speech

more ...

Rev. Feb.2002 TR 17-11

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## Hypoglycaemia

### *Common Causes*

- Skipped meals
- Vomiting
- Strenuous exercise
- Physical stress from extreme heat or cold
- Emotional stress
- Accidental overdose of insulin

more ...

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## Hypoglycaemia

### *Signs and Symptoms*

- Rapid onset of altered mental status
- Intoxicated appearance, staggering, slurred speech
- Atypical behaviour

*more ...*

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*...cont'd.*

## Hypoglycaemia

### *Signs and Symptoms*

- Combativeness and/or anxiety
- Rapid pulse rate
- Cool, clammy skin
- Hunger
- Headache
- Seizures

Rev. Feb.2002 TR 17-14

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## Cerebral Vascular Accident

A sudden loss of blood supply to the brain.

Rev. Feb.2002 TR 17-15

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## Cerebral Vascular Accident

### *Causes*

- Cerebral thrombosis
- Cerebral haemorrhage

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## Cerebral Vascular Accident

### *Signs and Symptoms*

- Headache (may be the first and only symptom)
- Fainting
- Altered mental status

*more ...*

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*...cont'd.*

## Cerebral Vascular Accident

### *Signs and Symptoms*

- Tingling or paralysis of the extremities or face
- Difficulty speaking
- Blurred vision

*more ...*

Rev. Feb.2002 TR 17-18

...cont'd.

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## **Cerebral Vascular Accident**

### *Signs and Symptoms*

- Convulsions
- Unequal pupils
- Loss of bladder or bowel control

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TR-17-19





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## Medical First Responder Course

# Lesson Plan 18

## Childbirth Emergencies

**Approximate Duration:** 4 hours

**Materials:**

- Flipcharts
- Transparencies
- Handout
- 2 childbirth mannequins
- 4 obstetrical kits
- Two assistants

### OBJECTIVES

Upon completion of this lesson, you will be able to:

- 1) List the eight steps for assessment of the mother.
- 2) List the seven steps for pre-hospital preparation of the mother.
- 3) List the ten steps for delivery of a baby.
- 4) List and describe three complications of pregnancy.
- 5) List and describe six complications of delivery.
- 6) Demonstrate the pre-hospital treatment for a breech presentation and a wrapped umbilical cord around the neck.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 18-1 TR 18-2	<hr/> <b><i>I. INTRODUCTION</i></b> <ol style="list-style-type: none"> <li>1. Introduction of instructor and assistants.</li> <li>2. Presentation of the lesson.</li> <li>3. Presentation of lesson objectives (ask participants to read them from WB).</li> </ol> <hr/>	
TR 18-3	<b><i>II. DEVELOPMENT</i></b>  <b>1. Anatomy of Pregnancy</b> <ul style="list-style-type: none"> <li>• <b>Amniotic sac:</b> A sac of fluid in which the foetus develops during pregnancy.</li> <li>• <b>Cervix:</b> The neck of the uterus in which the unborn infant passes into the vagina.</li> <li>• <b>Foetus:</b> The unborn developing baby in the uterus.</li> <li>• <b>Placenta:</b> A disk-shaped organ on the inner lining of the uterus. Rich in blood vessels, it supplies nourishment and oxygen to the foetus during pregnancy. It also absorbs waste from the foetus into the mother's bloodstream.</li> </ul>	
TR 18-4	<ul style="list-style-type: none"> <li>• <b>Umbilical cord:</b> An extension of the placenta through which the foetus receives nourishment while in the uterus.</li> <li>• <b>Uterus:</b> The organ that contains the developing foetus or unborn infant. A special arrangement of smooth muscles and blood vessels in the uterus allow for great expansion during pregnancy and forcible contractions during labour and delivery.</li> <li>• <b>Vagina:</b> Channel through which the infant passes to reach the outside.</li> </ul>	
TR 18-5	<b>2. Stages of Labour</b> <ol style="list-style-type: none"> <li>1) <b>First stage (dilation):</b> Begins with the mother's contractions and ends when the infant enters the birth canal. During this first and longest stage, the cervix becomes fully dilated (expanded).</li> </ol>	
TR 18-6	<ol style="list-style-type: none"> <li>2) <b>Second stage (expulsion):</b> Begins the moment the infant moves into the birth canal. When the baby's head appears at the opening of the birth canal, it is called "crowning". The second stage ends with the birth of the infant.</li> </ol>	
TR 18-7	<ol style="list-style-type: none"> <li>3) <b>Third stage (placental):</b> The placenta separates from the uterine wall. Usually it is then spontaneously expelled from the uterus.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<b>FC 18-1</b>	<b>3. Assessment of the Mother</b> Use universal precautions and secure the scene. <ol style="list-style-type: none"><li>1) Conduct initial assessment.</li><li>2) Ask if the patient has received prenatal care (by a doctor). If patient is under the care of a doctor, get the doctor's name and telephone number. Ask the patient if the doctor has informed her of any difficulties with the pregnancy and if the delivery is to be normal. Ask when her due date is.</li><li>3) Ask the patient if it is her first pregnancy. If so, the labour process will usually last close to 18 hours. The duration of labour is considerably shorter with each subsequent birth (approximately 2-3 hours).</li><li>4) Determine when contractions began and if the amniotic sac (water bag) has ruptured.</li><li>5) Ask the patient if she feels any pressure being applied to pelvis or the urge for a bowel movement. Do not allow patient to sit on toilet.</li></ol>	
<b>FC 18-2</b>	<ol style="list-style-type: none"><li>6) Determine the frequency and duration of contractions. Place a gloved hand on the patient's abdomen above the navel; feel for the involuntary tightening of the uterine muscles. Time the <b>duration</b> of contractions, from the moment the muscles tighten until they are completely relaxed. Then, time the <b>frequency</b>, from the start of one contraction to the start of the next.</li><li>7) Visual evaluation: Check for crowning or bulging in the vaginal area. If no crowning, move to next step. If the head or other part of the body is visible, prepare to deliver at the scene.</li><li>8) Determine if delivery will on-site or if there is time for transport:<ul style="list-style-type: none"><li>• If contractions are less than 2 minutes apart, prepare to deliver the baby at the scene.</li><li>• If contractions are between 2 and 5 minutes apart, make a decision on several factors, such as whether this is the first pregnancy, if the patient feels an urge for bowel movement, traffic and weather conditions, or other complications.</li><li>• If contractions are 5 minutes or more apart, the mother usually has time for transport.</li></ul></li></ol> <div><b>CAUTION: Do not allow the mother cross or hold her legs together to delay delivery. Death or permanent injury to the infant may result.</b></div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<h4>4. Pre-hospital Preparation of the Mother</h4> <p><b>&lt;Demonstrate treatment in this order.&gt;</b></p> <p>Use universal precautions and secure the scene. Make sure to use full personal protective equipment.</p> <ol style="list-style-type: none"> <li>1) Ensure privacy for the patient (select an appropriate area).</li> <li>2) Have the mother lie on her back with knees bent and legs spread. Elevate the buttocks slightly by placing a blanket or towel underneath. Inspect the vaginal area but do not touch it except during delivery of the baby.</li> <li>3) Have an O.B. (obstetrical) kit ready and opened.</li> <li>4) Place a sheet or clean towel under the patient's buttocks, another under the vaginal area and another covering the legs and abdomen.</li> <li>5) Evaluate frequency and duration of contractions.</li> <li>6) Check for crowning.</li> <li>7) Comfort and reassure the mother. Encourage her to keep breathing slowly and comfortably. Stress the importance of relaxing between each contraction.</li> </ol>	
TR 18-8		
TR 18-9	<h4>5. Delivery of the Baby</h4> <ol style="list-style-type: none"> <li>1) Place the palm of your hand against the top of the baby's head. As it emerges, apply very gentle pressure to prevent an explosive delivery. <b>Do not pull the infant from the vaginal opening.</b></li> <li>2) If the amniotic sac (water bag) has not broken, <b>tear it or pinch it open with your fingers</b> and pull it away from the infant's mouth and head. Do not delay this process. Never <b>use a sharp instrument!</b></li> <li>3) <b>If the umbilical cord is wrapped</b> around the infant's neck, use two gloved fingers to slip the cord over the head. <b>Only if you cannot dislodge the umbilical cord</b>, attach two clamps three inches apart and cut between the clamps.</li> </ol>	
TR 18-10	<ol style="list-style-type: none"> <li>4) <b>Support the baby's head.</b> The infant's head generally comes out face down and then a rotation begins toward either side. As soon as the baby's head presents, wipe the mouth and nose with sterile gauze pads. <b>Suction the baby's mouth first, then the nose</b>, using a rubber bulb syringe. Be sure to compress the syringe every time <u>before</u> inserting it.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 18-10	5) Support the baby with both hands as the rest of the body presents. <b>Gently guide the baby's head downward</b> to assist the mother in delivering the baby's upper shoulder. If the lower shoulder is slow to deliver, assist the delivery by gently guiding the baby's head upward.	
TR 18-11	6) Support the baby throughout the entire delivery. Grasp the feet as they emerge. <b>Once fully delivered, position the baby level with the mother's vagina until the umbilical cord is cut;</b> otherwise the baby's blood could return to the placenta. The newborn is very slippery — never lift the baby by the feet. <b>Record exact time of delivery.</b>	
TR 18-12	7) <b>Position, dry and wrap the baby.</b> Place the baby on his/her side with the head slightly lower than the body. This will allow the blood and other fluids to drain from the baby's mouth and nose. Gently dry the baby with clean towels and wrap him/her in a clean warm blanket. Only the face should be exposed.	
NOTE	<b>&lt;Discuss and cover the use of the APGAR Scoring System Handout located at the end of this lesson.&gt;</b>	
TR 18-13	8) <b>Assess the baby's breathing.</b> Suction the baby's mouth and nose again, in that order. Usually the baby will start breathing on its own within 30 seconds of being born. If not, encourage breathing by providing tactile stimulation, rubbing the back gently but vigorously, or by snapping a finger against the sole of the baby's foot. Do not lift the baby by its feet to slap its bottom! If assessment reveals shallow, slow or absent respiration, start artificial ventilation.	
TR 18-14		
TR 18-15	9) <b>Clamp and cut the umbilical cord when it stops pulsating.</b> Palpate the cord to make sure it is no longer pulsating before clamping; do not clamp or cut the cord if it is still pulsating. Position the first clamp approximately 25 cm. from the baby; then position the second clamp 8 cm. away from the first clamp toward the baby, then cut the cord using surgical scissors.	
TR 18-16	10) <b>Record the date, time and place of birth.</b>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>6. Delivery of the Placenta</b></p> <p>Keep in mind that you have <u>two</u> patients in your care: the mother as well as the baby. Care for the mother includes helping her deliver the placenta, controlling vaginal bleeding, and making her as comfortable as possible. The third stage of labour includes the delivery of the placenta with its section of umbilical cord, membranes of the amniotic sac, and some tissues lining the uterus. All of these together are known as the <i>afterbirth</i>.</p> <ol style="list-style-type: none"><li>1) Observe for delivery of placenta. This begins with a brief return of labour pains that stopped when the baby was born. You may notice a lengthening of the cord.</li><li>2) Feel for contractions. Encourage the mother to bear down as the uterus contracts.</li><li>3) As the placenta appears, slowly and gently guide it from the vagina, but never pull. Save the placenta in a plastic bag. In most cases, the placenta is expelled within a few minutes of delivery, but could take up to 30 minutes. Take the placenta to the hospital for examination by the physician.</li><li>4) Controlling vaginal bleeding after delivery.<ul style="list-style-type: none"><li>• Place sanitary napkin or towel on vaginal opening. Do not place anything inside the vagina.</li><li>• Have the mother lower her legs and keep them together without squeezing. Elevate her feet.</li><li>• Feel the mother's abdomen below the navel until you feel a hard object the size of a grapefruit. This is the mother's uterus. If bleeding appears to be excessive, massage the uterus using circular motions; this will cause the uterus to contract and control bleeding.</li><li>• Consider initiating breast-feeding to stimulate uterine contractions.</li></ul></li><li>5) Conduct ongoing assessment.</li></ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 18-3	<h2>7. Complications of Pregnancy</h2> <p>There are several types of pre-delivery emergencies that may arise in the pregnant patient prior to labour or childbirth that can threaten the life of both the mother and the baby. In most cases, definitive treatment is beyond the MFR's level of training and immediate transport is required.</p> <h3>Excessive pre-birth bleeding</h3> <p>A number of conditions can cause excessive pre-birth bleeding. One such condition is <i>placenta previa</i>, in which the placenta is formed in an abnormal location (low in the uterus and close to or over the cervical opening) that will not allow for a normal delivery. As the cervix dilates, it causes the placenta to tear. Another condition is <i>abruptio placentae</i>, in which the placenta separates from the uterine wall, either partially or entirely. Either type of complication may occur in the third trimester, and both are potentially life-threatening to the mother and foetus.</p> <h4>Pre-hospital treatment for pre-birth bleeding</h4> <ol style="list-style-type: none"> <li>1) Place the patient on her left side.</li> <li>2) Treat for shock. Elevate the patient's legs.</li> <li>3) Place a sanitary napkin or towel at vagina opening but do not place anything inside the vagina. Replace any blood soaked napkins but do not discard them. All blood soaked items should be taken to hospital for examination.</li> <li>4) Monitor all vital signs.</li> <li>5) Transport the patient.</li> </ol> <h3>Spontaneous Abortion</h3> <p>For a number of reasons, the foetus and placenta may deliver before the 20th week of pregnancy, generally before the baby can live on its own. This occurrence is called an abortion. When it happens naturally it is called a <i>spontaneous abortion</i>, or <i>miscarriage</i>. An induced abortion results from deliberate termination of the pregnancy, in either a legal or criminal setting.</p> <h4>Signs and symptoms of spontaneous abortion</h4> <ul style="list-style-type: none"> <li>• Vaginal bleeding, ranging from moderate to severe</li> <li>• Pain in the lower abdomen, similar to menstrual cramps or first stage labour pain</li> <li>• Noticeable discharge of tissue from the vagina</li> </ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
FC 18-4	<p><b>Pre-hospital treatment for spontaneous abortion</b></p> <ol style="list-style-type: none"> <li>1) Treat for shock. Provide oxygen per local protocol.</li> <li>2) Place a sanitary towel or something similar on the opening of the vagina. Do not place anything inside the vagina.</li> <li>3) Keep all the bloodstained towels and any expelled tissue for examination.</li> <li>4) Transport the patient.</li> </ol> <p><b>Ectopic Pregnancy</b></p> <p>In a normal pregnancy, the fertilized egg will eventually implant on the wall of the uterus. In an ectopic pregnancy, the fertilized egg implants in an oviduct, in the abdominal cavity, or outside the uterus. These areas are not able to contain or support the growing embryo.</p> <p><b>Signs and symptoms of ectopic pregnancy</b></p> <ul style="list-style-type: none"> <li>• Acute abdominal pain, usually on one side</li> <li>• Vaginal spotting or bleeding</li> <li>• Signs of shock</li> </ul> <p><b>Pre-hospital treatment for ectopic pregnancy</b></p> <ol style="list-style-type: none"> <li>1) Treat for shock. Provide oxygen per local protocol.</li> <li>2) Keep all the bloodstained towels and any expelled tissue for examination.</li> <li>3) Transport the patient.</li> </ol> <p><b>8. Complications of Delivery</b></p> <p>Although most babies are born without difficulty, complications may also occur during delivery. As with complications of pregnancy, these can also threaten the life of both the mother and the baby, and in many cases definitive treatment is beyond the MFR's level of training.</p> <p><b>Breech Birth</b></p> <p>This type is the most common abnormal delivery. A breech birth involves a buttocks-first or both-feet-first delivery. In addition, there is an increased risk or a prolapsed umbilical cord. Whenever possible, the mother should be transported to a hospital immediately for birth.</p>	





Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Pre-hospital treatment for breech birth</b></p> <ol style="list-style-type: none"><li>1) Position and prepare the mother for normal delivery.</li><li>2) Allow the buttocks or legs to deliver on their own — <b>never pull</b>.</li><li>3) Support the baby with the palm of your hand. The head should follow within <b>three minutes</b>.</li><li>4) If the head fails to deliver, <b>maintain infant airway and transport immediately</b>. Place the middle and index fingers of your gloved hand alongside the infant's face. Your palm should be turned towards the face. Form an airway by pushing the vagina away from the infant's face. With a finger, hold the baby's mouth open a little so that the baby can breathe.</li></ol> <p><b>Prolapsed Umbilical Cord</b></p> <p>This is a situation in which the umbilical cord presents first (common in breech births) and is squeezed between the vaginal wall and the head of the baby. This may cause oxygen supply to the baby to be totally interrupted. If, upon viewing the vaginal area, you see the umbilical cord presenting, the cord is prolapsed.</p> <p><b>Pre-hospital treatment for prolapsed umbilical cord</b></p> <ol style="list-style-type: none"><li>1) Do not try to push the cord inside the vagina.</li><li>2) Position the mother. Have the mother lie down on her back, tilted to the left side (if possible). Elevate her hips, using a pillow or blankets under the buttocks.</li><li>3) Provide oxygen per local protocol.</li><li>4) Wrap the exposed cord with a clean moistened towel.</li><li>5) Insert a gloved hand into the vagina far enough to gently push on the baby's head (or buttocks), to keep pressure off the cord. You may feel the cord pulsating when the pressure is released. Prepare to stay in this position throughout transport.</li></ol> <p>Transport the patient immediately.</p> <p><b>Limb Presentation</b></p> <p>A limb presentation is a situation in which a single leg, an arm and a leg together, or an arm and shoulder, present first. This is often accompanied by a prolapsed umbilical cord. Limb presentations cannot be delivered in the pre-hospital setting. Position the mother on her back with pelvis elevated, provide oxygen per local protocol and transport immediately. If prolapsed cord is present, apply treatment as discussed previously.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Multiple Births</b></p> <p>Twins are delivered the same way as single babies; in fact, since twins are smaller, delivery is often easier. Multiple birth may occur if the mother's abdomen is unusually large before, or remains large after, delivery. If labour contractions continue (usually within 10 minutes) after the first birth, the next delivery may be imminent.</p> <p><b>Pre-hospital treatment for multiple births</b></p> <ol style="list-style-type: none"> <li>1. Clamp or tie the cord of the first baby before the second baby is born.</li> <li>2. The second baby may be born before or after the placenta is delivered.</li> <li>3. Provide care for the babies, umbilical cords, placenta(s), and the mother as in a normal delivery.</li> </ol> <p><b>Premature Birth</b></p> <p>By definition, a premature infant is one who weighs less than 2.5 kilos (5.5 lbs.) or is born before the 36th week of pregnancy. Since you will probably not be able to weigh the baby, make a determination regarding prematurity based on the mother's information and the baby's appearance. The head of a premature baby is proportionately much larger, and the body is smaller and more reddish than a normal baby. Premature babies are very susceptible to infection.</p> <p><b>Pre-hospital treatment for a premature baby</b></p> <ol style="list-style-type: none"> <li>1) Keep the baby warm.</li> <li>2) Maintain open airway.</li> <li>3) Watch the umbilical cord for bleeding.</li> <li>4) Provide oxygen per local protocol.</li> <li>5) Avoid contamination. Keep the baby away from people and avoid breathing directly onto the baby.</li> </ol> <p><b>Stillbirth</b></p> <p>This is a situation in which the baby dies in the womb hours, days, or even weeks before birth. Signs of obvious death include the presence of blisters, foul odour, skin or tissue deterioration and discoloration, and a softened head. At other times, the baby may be born in cardiac or pulmonary arrest but may survive with resuscitation.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>Managing a stillbirth</b></p> <ul style="list-style-type: none"><li>• <b>Do not attempt to revive the baby if it appears to have been dead for an extended period of time.</b> Offer emotional support for the mother and relatives that might be present.</li><li>• A baby born in cardiac or pulmonary arrest should receive basic life support.</li><li>• <b>Do not lie</b> to the mother regarding the baby's condition, and do not prevent her from seeing the baby.</li><li>• <b>Comply with the mother's religious beliefs</b> and follow local customs, laws and protocols.</li></ul> <hr/> <p><b>III. REVIEW</b></p> <p><b>&lt;Review objectives on page 1 and ensure all participants have understood them clearly.&gt;</b></p> <hr/> <p><b>IV. PRACTICALS</b></p> <ol style="list-style-type: none"><li>1) Divide the participants into groups of 6 (maximum)</li><li>2) Observe each participant and correct if necessary. Allow them to practice until they can execute each step without error.</li><li>3) Each participant should practice with a childbirth mannequin.</li></ol> <hr/> <p><b>V. EVALUATION</b></p> <p>Allow 10 minutes for participants to fill out lesson evaluation.</p> <hr/> <p><b>VI. CLOSE</b></p> <ol style="list-style-type: none"><li>1) Verify the achievement of the objectives.</li><li>2) Thank the participants and announce the next lesson.</li></ol>	



## APGAR Scoring System

		Points	One minute	Five minutes
<b>A</b>	<b>Appearance (skin color)</b>			
	Blue or pale extremities	0		
	Pink trunk and blue extremities	1		
	Completely pink	2		
<b>P</b>	<b>Pulse</b>			
	Absent	0		
	100 or less	1		
	More than 100	2		
<b>G</b>	<b>Grimace (Irritability)</b>			
	No response	0		
	Grimace or whispers	1		
	Actively cries	2		
<b>A</b>	<b>Activity (Muscle tone)</b>			
	Flaccid, Limp	0		
	Some flexion of extremities	1		
	Active extremity motion	2		
<b>R</b>	<b>Respiratory effort</b>			
	Absent	0		
	Slow and irregular	1		
	Strong cry	2		
	Total Score			

Ideally, scores are taken at one minute and five minutes after birth.

If the neonate is not breathing, DO NOT withhold resuscitation for an APGAR score.

Total score indicates the following:

- 7-10: Indicates an active and vigorous newborn who requires routine care.
- 4-6: Indicates a moderately depressed newborn who requires oxygen and stimulation.
- 0-3: Indicates a severely depressed newborn who requires immediate resuscitation efforts.



## Lesson 18

### Practical Exercises

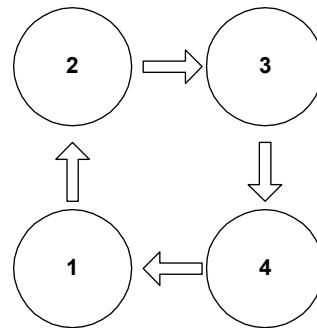
### Childbirth Emergencies

- Station 1:** Normal delivery of infant and placenta.
- Station 2:** Care of the newborn infant.
- Station 3:** Childbirth complications: breech birth, prolapsed cord, and an umbilical cord around the neck.
- Station 4:** Assessment of the mother for imminent delivery.

**Rotation type for this lesson:**

**Number of rotations: 4**

**Duration: 2 hours (30 minutes per station)**



**<NOTE: After a brief explanation of the mechanics of this station, let participants begin practising. Do not spend time explaining material that was already covered during lecture. An instructor will be in charge of each station and responsible for filling out the evaluation.>**

**<Allow time for questions.>**

- Station 1:** Normal delivery of infant and placenta.

**Materials:**

- PPE for each participant
- Disinfectant and dressings
- One sheet per mannequin
- 2 or 3 infant mannequins
- One childbirth (OB) kit
- Instructor evaluation form (Skills Checklist)



## **Lesson 18**

### **Practical Exercises**

#### **Station 2: Care of the newborn infant.**

##### **Materials:**

- PPE for each participant
- Disinfectant and dressings
- One sheet per mannequin
- 2 or 3 infant mannequins
- 2 infant BVM's
- 2 infant CPR masks
- APGAR score sheet (handout)
- Instructor evaluation form (Skills Checklist)

#### **Station 3: Childbirth complications: breech birth, prolapsed cord, and an umbilical cord around the neck.**

##### **Materials:**

- PPE for each participant
- One participant to act as patient
- One childbirth mannequin
- One childbirth (OB) kit
- Extra dressings
- Four clean sheets
- Instructor evaluation form (Skills Checklist)

#### **Station 4: Assessment of the mother for imminent delivery.**

##### **Materials:**

- PPE for each participant
- One childbirth mannequin
- One childbirth (OB) kit
- Extra dressings
- Four clean sheets
- Instructor evaluation form (Skills Checklist)



## Lesson 18

### Skills Checklist

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### Stations 1, 2, 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b>	Use PPE					
	Normal delivery.					
<b>Station 2</b>	Use PPE					
	Care of the newborn infant.					
<b>Station 3</b>	Use PPE					
	Treat prolapsed umbilical cord.					
	Treat breech birth.					
	Treat umbilical cord wrapped around the neck.					
<b>Station 4</b>	Use of PPE.					
	Assess the mother.					

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor:



## Lesson 18

### Post-Test

# Childbirth Emergencies

#### 1. List the eight steps for assessment of the mother.

- 1) *Conduct initial assessment.*
- 2) *Gather information on prenatal care, doctor, potential difficulties with pregnancy, when due date is.*
- 3) *Ask the patient if it is her first pregnancy.*
- 4) *Determine when contractions began and if the amniotic sac (water bag) has ruptured.*
- 5) *Ask the patient if she feels any pressure being applied to pelvis or the urge for a bowel movement. Do not allow patient to sit on toilet. C*
- 6) *Determine the frequency and duration of contractions.*
- 7) *Visual evaluation: Check for crowning or bulging in the vaginal area. If no crowning, move to next step. If the head or other part of the body is visible, prepare to deliver at the scene.*
- 8) *Determine if delivery will be on scene or if there is time for transport:*

#### 2. List the seven steps for pre-hospital preparation of the mother.

- 1) *Ensure privacy for the patient (select an appropriate area).*
- 2) *Have the mother lie on her back with knees bent and legs spread. Elevate the buttocks slightly by placing a blanket or towel underneath. Inspect the vaginal area but do not touch it except during delivery of the baby.*
- 3) *Have an O.B. (obstetrical) kit ready and opened.*
- 4) *Place a sheet or clean towel under the patient's buttocks, another under the vaginal area and another covering the legs and abdomen.*
- 5) *Evaluate frequency and duration of contractions.*
- 6) *Check for crowning.*
- 7) *Comfort and reassure the mother. Encourage her to keep breathing slowly and comfortably. Stress the importance of relaxing between each contraction.*

#### 3. List the ten steps for delivery of a baby.

- 1) *Place the palm of your hand against the top of the baby's head; prevent an explosive delivery. **Do not pull the infant from the vaginal opening.***
- 2) *If the amniotic sac (water bag) has not broken, tear it or pinch it open with your fingers and pull it away from the infant's mouth and head. Never use a sharp instrument!*
- 3) *If the umbilical cord is wrapped around the infant's neck, use two gloved fingers to slip the cord over the head. **Only** if you cannot dislodge the umbilical cord, attach two clamps three inches apart. Then cut between the clamps.*





## Lesson 18

### Post-Test (cont'd.)

- 4) *Support the baby's head. Wipe the mouth and nose with sterile gauze pads. Suction the baby's mouth and nose using a rubber bulb syringe.*
- 5) *Support the baby with both hands as the rest of the body presents. Gently guide the baby's head downward the upward to assist in delivering the baby's shoulders.*
- 6) *Support the baby throughout the entire delivery. Grasp the feet as they emerge. Once fully delivered, position the baby level with the mother's vagina until the umbilical cord is cut. Note exact time of delivery.*
- 7) *Position the baby to allow the blood and other fluids to drain from the mouth and nose. Dry and wrap the baby in a clean warm blanket. Only the face should be exposed.*
- 8) *Assess the baby's breathing. Suction the baby's mouth and nose again. Do not lift the baby by its feet to slap its bottom! If assessment reveals shallow, slow or absent respiration, start artificial ventilation.*
- 9) *Clamp and cut the umbilical cord when it stops pulsating. Palpate the cord to make sure it is no longer pulsating before clamping. Position the first clamp approximately 25 cm. from the baby; then position the second clamp 8 cm. away from the first clamp, then cut the cord using surgical scissors.*
- 10) *Record the date, time and place of birth.*

#### 4) List and describe three complications of pregnancy.

##### ***Excessive pre-birth bleeding***

*Can be caused by placenta previa, in which the placenta forms in an abnormal location (low in the uterus and close to or over the cervical opening) that will not allow for a normal delivery. As the cervix dilates, it causes the placenta to tear. Another condition is abruptio placentae, in which the placenta separates from the uterine wall, either partially or entirely. Either type of complication may occur in the third trimester, and both are potentially life-threatening to the mother and foetus.*

##### ***Spontaneous Abortion***

*This situation occurs when the foetus and placenta deliver before the 20th week of pregnancy due to natural circumstances, generally before the baby can live on its own. Also called miscarriage.*

##### ***Ectopic Pregnancy***

*Pregnancy in which the fertilized egg implants in an oviduct, in the abdominal cavity, or outside the uterus. These areas are not able to contain or support the growing embryo.*



## Lesson 18

### Post-Test (cont'd.)

#### 5. List and describe six complications of delivery.

##### ***Breech Birth***

*Most common abnormal delivery. Involves a buttocks-first or both-feet-first delivery. Poses an increased risk of a prolapsed umbilical cord. Whenever possible, the mother should be transported immediately.*

##### ***Prolapsed Umbilical Cord***

*The umbilical cord presents first and is squeezed between the vaginal wall and the head of the baby. This may cause oxygen supply to the baby to be totally interrupted. If, upon viewing the vaginal area, you see the umbilical cord presenting, the cord is prolapsed.*

##### ***Limb Presentation***

*Deliver twins the same way as single babies. Multiple birth is possible if the mother's abdomen is unusually large before, or remains large after, delivery. If labour contractions continue after the first birth (usually within 10 minutes), the next delivery may be imminent.*

##### ***Premature Birth***

*A premature infant is one who weighs less than 2.5 kilos (5.5 lbs.) or is born before the 36th week of pregnancy. Make a determination regarding prematurity based on the mother's information and the baby's appearance. The head of a premature baby is proportionately much larger, and the body is smaller and more reddish than a normal baby.*

##### ***Stillbirth***

*A situation in which the baby dies in the womb hours, days, or even weeks before birth. Signs of obvious death include the presence of blisters, foul odour, skin or tissue deterioration and discoloration, and a softened head. At other times, the baby may be born in cardiac or pulmonary arrest but may survive with resuscitation.*

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## Assessment of the Mother

1. Conduct initial assessment
2. Pre-natal care/doctor's information?
3. First pregnancy?
4. Time contractions started?
5. Amniotic sac intact?

*more ...*

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*...cont'd.*

## Assessment of the Mother

6. Urge for bowel movement?
7. Determine frequency and duration of contractions
8. Visual evaluation: crowning or bulging
9. Determine if on-site delivery or transport

*more ...*

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## Complications of Pregnancy

- Excessive pre-birth bleeding
- Spontaneous abortion
- Ectopic pregnancy

*more ...*

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## Complications of Delivery

- Breech birth
- Prolapsed umbilical cord
- Limb presentation
- Multiple births
- Premature birth
- Stillbirth

*more ...*

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Medical First Responder Course

## **Lesson 18 Station 1**

### **Normal Delivery**

1. Assess the mother for delivery.
2. Prepare the mother and equipment.
3. Maintain gentle pressure on the infant's head during delivery.
4. Ensure amniotic sac is broken.
5. Suction airway when the head presents.
6. Deliver infant's shoulders and body.
7. Dry off and warm the infant.
8. Assess the infant.
9. Place the clamps and cut the cord.
10. Record the date, time and place of birth.
11. Hand off the infant to the mother.
12. Deliver and inspect the placenta.

RM p. 425-428

Rev. Feb 2002 FC 18-5

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Medical First Responder Course

## **Lesson 18 Station 2**

### **Care of the newborn infant**

1. Warm and dry the infant.
2. Re-suction the infant's nose and mouth.
3. Stimulate the infant to assist with normal respirations.
4. Assess the infant to obtain an APGAR score.
5. If infant is not breathing, start artificial respirations (40-60 rpm).
6. After 30 seconds, assess heart rate (if less than 100 bpm, continue artificial respirations).
7. After 30 seconds, reassess heart rate (if less than 80 bpm, start CPR).
8. After 30 seconds, reassess the infant. Repeat Steps 4-7 as needed.

RM p. 428

Rev. Feb 2002 FC 18-6

7

Medical First Responder Course

## **Lesson 18 Station 3**

### **Breech Birth**

1. Position and prepare the mother for normal delivery.
2. Let infant's buttocks and trunk deliver on their own.
3. Place your arm between the infant's legs and support the infant.
4. Place the first and second fingers of your gloved hand alongside the infant's face.
5. Push the vagina away from the infant's face to create an airway.
6. Hold the infant's mouth slightly open with your finger.
7. Continue Steps 4-6 until the infant's head delivers on its own.

RM p. 430-431

Rev. Feb 2002 FC 18-7

8

Medical First Responder Course

## **Lesson 18 Station 3**

### **Prolapsed Cord**

1. Have the mother lie on her left side, knees drawn to her chest.
2. Elevate her hips and legs on a pillow.
3. Administer high-flow oxygen.
4. With a gloved hand, gently push the baby up the vagina to relieve pressure on the cord (follow local protocols).
5. Maintain Steps 1-4 until the mother is transported to a hospital.
6. Without pushing the cord back into the vagina, cover the cord with a sterile, moist dressing.

RM p. 430-431

Rev. Feb 2002 FC 18-8

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Medical First Responder Course

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**Lesson 18**  
**Station 3**

**Umbilical cord wrapped around the neck**

Infant's head presents with the cord wrapped around the neck.

1. Try to slip the cord gently over the infant's shoulders or head.
2. If you cannot do this because the cord is wrapped tightly around the neck, place clamps and cut the cord.
3. Continue delivery maintaining control of the umbilical cord.

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Rev. Feb 2002 FC 18-9

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Medical First Responder Course

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**Lesson 18**  
**Station 4**

**Assessment of the Mother**

1. Conduct initial assessment.
2. Obtain mother's history:
  - Length of term
  - Number of previous live births
  - Frequency and duration of contractions
  - Any haemorrhaging?
  - Has water broken?
  - Any urge for bowel movement?
3. With permission, examine for crowning.
4. Palpate to determine the strength of contractions.
5. Take vital signs.
6. Determine whether to deliver on-site or transport.

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RM p. 433

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Rev. Feb 2002 FC 18-10

1

Medical First Responder Course

## Lesson 18 Objectives

- 1) List the eight steps for assessment of the mother.
- 2) List the seven steps for pre-hospital preparation of the mother.
- 3) List the ten steps for delivery of a baby.

*more ...*

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2

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....cont'd

## Lesson 18 Objectives

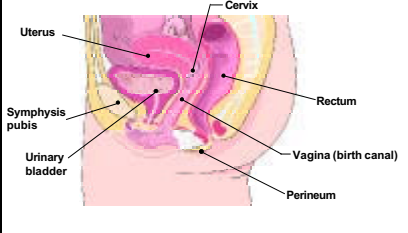
- 4) List and describe three complications of pregnancy.
- 5) List and describe six complications of delivery.
- 6) Demonstrate the pre-hospital treatment for a breech presentation and a wrapped umbilical cord around the neck.

Rev. Feb.2002 TR18-2

3

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## Anatomy of Pregnancy

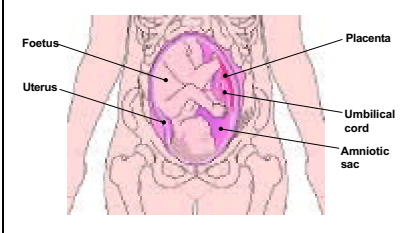


Rev. Feb.2002 TR18-3

4

Medical First Responder Course

## Anatomy of Pregnancy

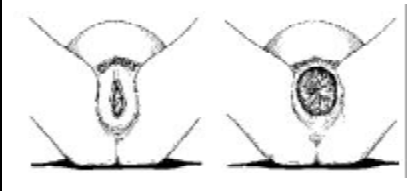


Rev. Feb.2002 TR18-4

5

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## First Stage of Labour

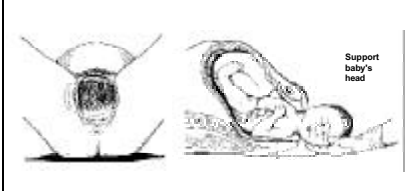


Rev. Feb.2002 TR18-5

6

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## Second Stage of Labour



Rev. Feb.2002 TR18-6

7

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### Third Stage of Labour

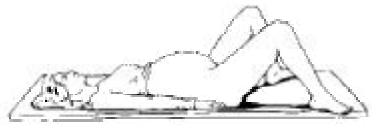
During this stage, the placenta separates from the uterine wall. It is usually then spontaneously expelled from the uterus.

Rev. Feb.2002 TR-18-7

8

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### Patient's position during childbirth

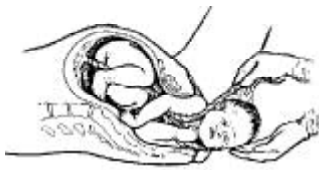


Rev. Feb.2002 TR-18-8

9

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### Remove umbilical cord from around baby's neck




Rev. Feb.2002 TR-18-9

10

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### Support the baby's head




Rev. Feb.2002 TR-18-10

11

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### Guide the baby's head to assist in delivering shoulders




Support the baby through the entire process.

Rev. Feb.2002 TR-18-11

12

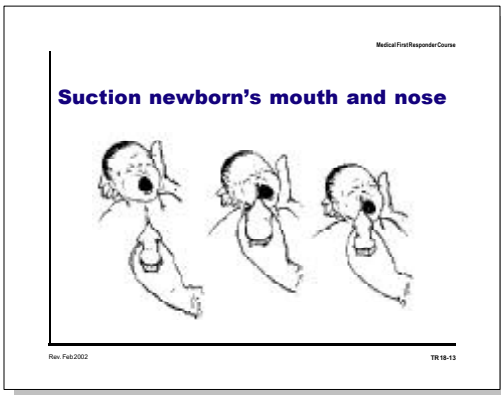
Medical First Responder Course

### Maintain open airway

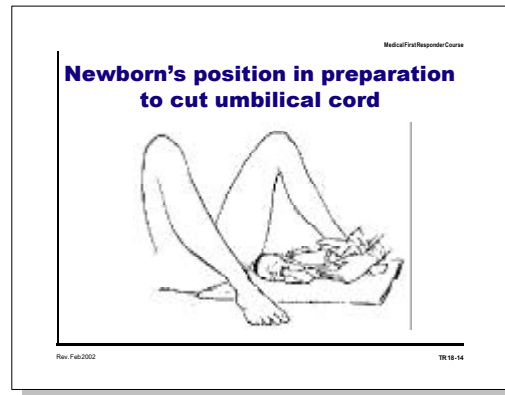


Rev. Feb.2002 TR-18-12

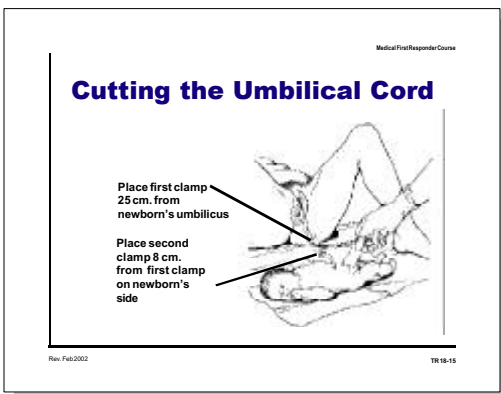
13



14



15







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## Medical First Responder Course

# Lesson Plan 19

## Lifting and Moving Patients

**Approximate Duration:** 3 hours

**Materials:**

- Transparencies
- Flipcharts
- Slides
- Slide projector
- 2 assistants
- 5 triangular bandages
- 1 blanket
- 2 sheets
- 2 adult cervical collars
- 2 rescue charts release
- 1 bandage roll
- 2 wooden blocks (4"x4", 18")

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. List three emergency moves and two non-emergency moves for lifting and moving a patient.
2. Demonstrate the techniques for immobilising and transporting a patient, using a backboard.
3. Name five examples of situations that might require you to make an emergency move with a patient.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 19-1 TR 19-2</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduction of instructor and assistants.</li> <li>2. Presentation of the lesson.</li> <li>3. Present lesson objectives (ask a participant to read aloud course objectives from manual).</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Background</b></p> <p>After arriving at the scene, a patient may need to be handled or transported. Swiftness at the scene may be a major consideration in a dangerous situation. If a patient is handled improperly, it may cause further injury.</p> <p>Each EMS system defines when and how a patient may be moved, generally only if the patient is in immediate danger.</p> <p><b>NOTE</b> <i>&lt;Follow local protocols.&gt;</i></p> <p><b>2. Body Mechanics</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> Proper use of your body to facilitate lifting and moving, and to prevent injury.</p> </div> <p>Incorrectly lifting and carrying equipment or patients could cause injury, and potentially end an EMS career or cause life-long pain. When it comes to lifting follow these basic rules to prevent injuries:</p> <ul style="list-style-type: none"> <li>• <b>Plan your move</b> before lifting an object.</li> <li>• <b>Use your legs</b> to lift, not your back.</li> <li>• Keep the weight of the object as <b>close to your body</b> as possible</li> <li>• <b>“Stack”</b> – move your body as a vertical unit. Visualise your shoulders as stacked onto your hips, your hips to your feet.</li> <li>• <b>Reduce the height or distance</b> you need to move an object.</li> <li>• <b>Reposition and lift in stages.</b></li> </ul> <p>Apply these principles to lifting, pulling, pushing, carrying, moving or reaching for an object. The key to preventing injury is <b>correct alignment</b> of the spine. Keep a normal inward curve of the lower back. Keep wrist and knees in normal alignment.</p>	
<p>TR 19-3</p>		



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p>Teamwork is essential. Communicate during a task, clearly and frequently. Use commands that are easy for team members to understand. Verbally coordinate moves from beginning to end.</p> <p><b>NOTE</b> <i>&lt;Advise participants that proper body mechanics will not protect those who are not physically fit.&gt;</i></p> <p>A proactive, well-balanced physical fitness program should include training in flexibility, cardiovascular exercise, strength and nutrition. However, these concerns are beyond the scope of this course.</p> <p><b>3. Moving Patients</b></p> <p><b>NOTE</b> <i>&lt;Allow participants to respond to the following questions.&gt;</i></p> <ul style="list-style-type: none"> <li>• How soon should you move the patient?</li> <li>• Must you complete your assessment before moving the patient?</li> <li>• How much time should you spend on spinal protection?</li> </ul> <p><b>Answer:</b> It depends on the circumstances.</p> <p>Generally, if there is no threat of injury, provide emergency care and then move the patient. If the scene is potentially unsafe or poses an immediate threat, you may have to move the patient.</p> <p><b>NOTE</b> <i>&lt;Follow local protocols.&gt;</i></p> <p>Patient-moving techniques can be classified as <i>emergency moves</i> and <i>non-emergency moves</i>.</p> <p><b>3.1 Emergency Moves</b></p> <p><b>TR 19-4</b> <b>Make an emergency move only when there is immediate danger to the patient.</b></p> <p><b>NOTE</b> <i>&lt;Ask participants for examples of situations that may require an emergency move.&gt;</i></p> <p>Examples of situations which might require you to make an emergency move:</p> <p><b>TR 19-5</b></p> <ul style="list-style-type: none"> <li>• <b>Fire or threat of fire</b> – always considered a great threat to patients and rescuers.</li> <li>• <b>Explosion or threat of explosion</b> (hazardous scene)</li> </ul>	



**LP 19-4**



Visual Aids and Other Materials	CONTENT	Time Elapsed
<b>NOTE</b>	<p><b>&lt;Demonstrate the following moves.&gt;</b></p> <p>Examples of non-emergency moves:</p> <ul style="list-style-type: none"><li>• <b>Direct-ground / bed lift:</b> This move is difficult if the patient weighs more than 80 kilos, is on the ground or other low surface or is uncooperative. Requires at least three people.</li><li>• <b>Extremity lift:</b> Commonly used to move patients from a chair or bed to a stretcher or the floor. Do not use on patients with extremity injuries.</li></ul> <p><b>4. Positioning the Patient</b></p> <p>How you position a patient depends on the patient's condition.</p> <p>Examples:</p> <ul style="list-style-type: none"><li>• Patient showing signs of shock may be placed in the shock position – elevate legs or foot end of long spine board 20-30 cm.</li><li>• Patient with respiratory problems may get into a more comfortable position, unless injuries prevent it. These patients generally want to sit up.</li><li>• Patients with abdominal pain generally want to be on one side with legs drawn up.</li><li>• A responsive patient, who is nauseated or vomiting, should be allowed to remain in a position of comfort, unless injuries prevent it. Always be ready to manage patient airway.</li><li>• Trauma patients, especially suspected spinal injury patients, should be appropriately immobilised on long spine board.</li><li>• Place patient in recovery position if unconscious and not contraindicated.</li></ul> <p>Obviously it is not possible to address every situation. Conditions at the scene and the patient's condition will dictate a good position for the patient.</p>	



**LP 19-6**



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>III. REVIEW</i></b>  <b>&lt;Review lesson objectives on page 1. Make sure all participants have understood them clearly.&gt;</b>  <hr/> <b><i>IV. PRACTICAL EXERCISES</i></b> Rotate participants through the various stations according to the lesson plan.  <hr/> <b><i>V. POST TEST</i></b>  <ol style="list-style-type: none"><li>1. Respond to the post test.</li><li>2. Verify achievement of objectives.</li></ol> <hr/> <b><i>VI. CLOSING</i></b>  <ol style="list-style-type: none"><li>1. Comments, questions, suggestions.</li><li>2. Thank the participants and announce the next lesson.</li></ol>	



## Lesson 19

### Practical Exercises

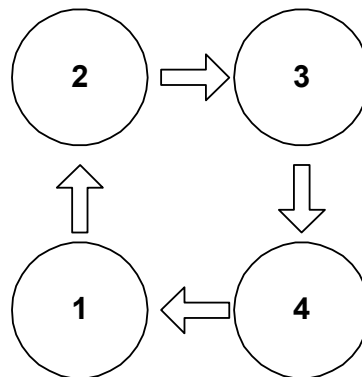
### Lifting and Moving Patients

- \
- Station 1.** Lifts and carries.
- Station 2:** Removing a patient from an automobile using a long backboard.
- Station 3:** Strapping a patient to a long backboard.
- Station 4.** Removing a patient from an automobile using a short backboard.

**Rotation type for this lesson:**

**Number of rotations: 4**

**Duration: 2 hours (30 minutes per station)**



**<NOTE: After a brief explanation of the mechanics of this station, let participants begin practising. An instructor will be in charge of each station and responsible for filling out the evaluation. These exercises will not require arrival protocols, initial assessment or physical exam.>**

**<DO NOT SPEND TIME EXPLAINING MATERIAL THAT WAS ALREADY COVERED DURING LECTURE.>**





## **Lesson 19**

### **Practical Exercises (cont'd.)**

#### **Station 1: Lifts and carries.**

##### **Materials:**

- PPE for all participants
- 2 blankets
- 2 straight-back chairs

#### **Station 2: Removing a patient from an automobile using a long backboard.**

##### **Materials:**

- PPE for all participants
- 1 long backboard (with straps)
- 1 set of cervical collars
- 2 rolls of wide tape
- 1 straight-back chair
- 1 long wood splint

#### **Station 3: Strapping a patient to a long backboard.**

##### **Materials:**

- 1 long backboard (with straps)
- 1 set of cervical collars
- 1 blanket
- 2 rolls of wide tape

#### **Station 4: Removing a patient from an automobile using a short backboard.**

##### **Materials:**

- One short backboard (with straps)
- 1 set of cervical collars
- 2 rolls of wide tape
- 1 straight-back chair
- 1 long wood splint



## MFR Lesson 19 Skills Checklist

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### Stations 1, 2, 3 and 4

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Check the box showing on which attempt the participant was able to perform the step successfully. UTP indicates unable to perform successfully within four attempts.

Performance Guidelines		Successful on Attempt				UTP
		1	2	3	4	
<b>Station 1</b>	Use PPE					
	Blanket drag					
	Shoulder or forearm drag					
	Direct ground lift					
	Extremity lift					
<b>Station 2</b>	Use PPE					
	Remove a patient from an automobile using a long backboard					
<b>Station 3</b>	Use PPE					
	Strapping a patient to a long backboard					
<b>Station 4</b>	Use of PPE.					
	Removing a patient from an automobile using a short backboard					

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Overall Performance	
Station 1 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor: _____	Station 2 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor: _____
Station 3 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor: _____	Station 4 <input type="checkbox"/> Outstanding <input type="checkbox"/> Successful <input type="checkbox"/> Needs Imp. Instructor: _____



## **Lesson 19**

### **Post-Test**

### **Lifting and Moving Patients**

1. List three emergency moves and two non-emergency moves for lifting and moving a patient.

**Emergency Moves:**

- *Shirt drag*
- *Shoulder*
- *Forearm drag*

**Non-Emergency Moves:**

- *Direct-ground/bed lift*
- *Extremity lift*

2. Name five examples of situations that might require you to make an emergency move with a patient.

- *Fire or threat of fire*
- *Explosion or threat of explosion*
- *Inability to protect the patient from hazards*
- *To gain access to other patients who need care*
- *Life-saving care cannot be given at location*

1

Medical First Responder Course

## Lesson 19 Station 1

### Lifts and carries

These lifts and carries should be practised on level ground and going up and down stairs. Each participant will demonstrate the following lifts or carries. These will be done individually or as a team.

- Blanket drag
- Shoulder or forearm drag
- Direct ground lift
- Extremity lift

RM p. 68-73

Rev. Feb 2002 FC 19-1

2

Medical First Responder Course

## Lesson 19 Station 2

### Removing a patient from an automobile using a long backboard

1. Maintain manual stabilisation.
2. Apply cervical collar.
3. Rotate the patient into position.
4. Move the backboard into position.
5. Lower the patient onto the backboard.
6. Slide the patient into position on the backboard using small movements.

RM p. 393, 395

Rev. Feb 2002 FC 19-2

3

Medical First Responder Course

## Lesson 19 Station 3

### Strapping a patient to a long backboard Secure the patient's torso

1. Place the female end of buckle on patient's chest.
2. Run the male end of the strap over one shoulder and down through the hand-hole.
3. Bring the strap back up through a hand-hole by the patient's hips.
4. Run the strap over the hips and down the hand-hole on the other side.
5. Bring the strap out and onto the chest.
6. Connect the buckle ends and tighten.
7. Repeat Steps 1-6 on the other side.
8. If the patient is unconscious, tie hands together over the stomach.

*more ...*

Rev. Feb 2002 FC 19-3

4

Medical First Responder Course

*...cont'd.*

## Lesson 19 Station 3

### Strapping a patient to a long backboard Secure the patient's legs

9. Place the female end of the buckle on the patient's legs above the knees.
10. Run the male end of the strap to one side and down through the hand-hole.
11. Bring the strap back up through a hand-hole below the patient's knees.
12. Run the strap over the legs and down the hand-hole on the other side.
13. Bring the strap back up through a hand-hole above the knees (in line with the female end of the buckle).
14. Connect the buckle ends and tighten.

*more ...*

Rev. Feb 2002 FC 19-4

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Medical First Responder Course

...cont'd.

## Lesson 19 Station 3

**Strapping a patient to a long backboard**  
**Secure the patient's head**

15. Place a head roll under the patient's head on the backboard.
16. Run 5-cm tape across the patient's forehead and headroll to both sides of the backboard.
17. Run 5-cm tape across the patient's chin and headroll to both sides of the backboard.

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Rev. Feb 2002 FC 19-5

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Medical First Responder Course

## Lesson 19 Station 4

**Removing a patient from an automobile using a short backboard**

1. Maintain manual stabilisation.
2. Apply cervical collar.
3. Position the short backboard behind the patient.
4. Secure the patient's torso to the backboard.
5. Pad behind the patient's head and secure it to the backboard.
6. Rotate the patient into position.
7. Lean back the torso of the patient.
8. Using the backboard and supporting the patient's legs, lift and remove the patient from the automobile.

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RM p. 392, 394

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Rev. Feb 2002 FC 19-6

1

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## Lesson 19 Objectives

1. List three emergency moves and two non-emergency moves for lifting and moving a patient.
2. Demonstrate the techniques for immobilising and transporting a patient, using a backboard.

*more ...*

Rev. Feb.2002 TR19-1

2

Medical First Responder Course

*...cont'd.*

## Lesson 19 Objectives

3. Name five examples of situations that might require you to make an emergency move with a patient.

Rev. Feb.2002 TR19-2

3

Medical First Responder Course

## Body Mechanics

The proper use of your body to facilitate lifting and moving, and to prevent injury

Rev. Feb.2002 TR19-3

4

Medical First Responder Course

## Emergency Moves

Make an emergency move only when there is immediate danger to the patient.

Rev. Feb.2002 TR19-4

5

Medical First Responder Course

## Situations Requiring Emergency Moves

- Fire or threat of fire
- Explosion or threat of explosion
- Inability to protect the patient from hazards

*more ...*

Rev. Feb.2002 TR19-5

6

Medical First Responder Course

*...cont'd.*

## Situations Requiring Emergency Moves

- To gain access to other patients who need care
- Life-saving care cannot be given at location

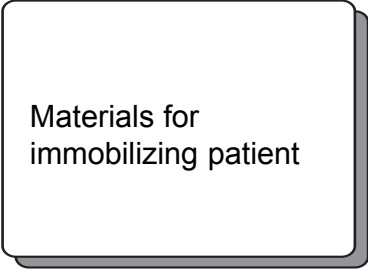
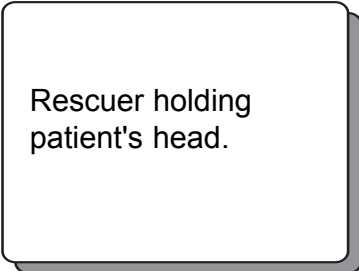
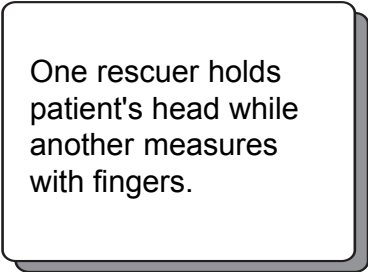
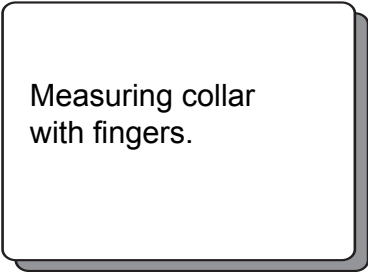
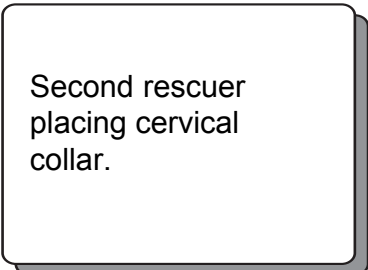
Rev. Feb.2002 TR19-6

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## SLIDE PROGRAMME GUIDE

### LESSON 19: Lifting and Moving Patients

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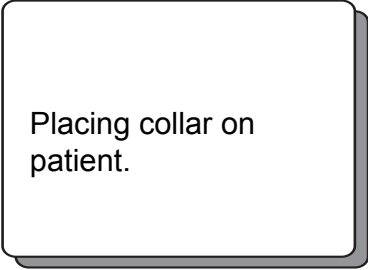
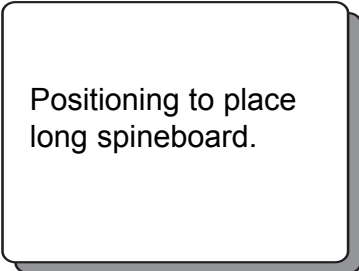
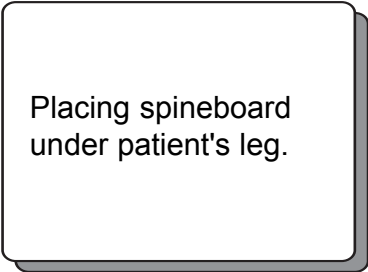
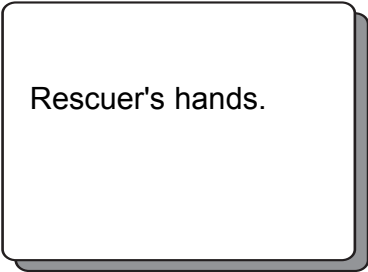
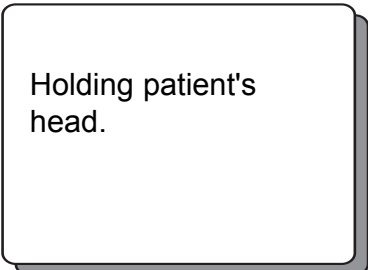
Slide Name	Slide Number and Description
 <p>Materials for immobilizing patient</p>	<b>SL 19-1</b>  Materials needed to remove a patient from a vehicle – folding stretcher, rolled blanket, long spineboard with straps, cervical collars, and wide tape.
 <p>Rescuer holding patient's head.</p>	<b>SL 19-2</b>  Rescuer holding patient's head in neutral position.
 <p>One rescuer holds patient's head while another measures with fingers.</p>	<b>SL 19-3</b>  One rescuer holds the patient's head in neutral position while the other measures the patient to select the correct size cervical collar.
 <p>Measuring collar with fingers.</p>	<b>SL 19-4</b>  The second rescuer measures the collar to select the correct size.
 <p>Second rescuer placing cervical collar.</p>	<b>SL 19-5</b>  While first rescuer maintains patient's neck in neutral position, the other places the collar on the patient.

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## SLIDE PROGRAMME GUIDE

### LESSON 19: Lifting and Moving Patients

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Slide Name	Slide Number and Description
 <p>Placing collar on patient.</p>	<b>SL 19-6</b>  Placing collar on patient.
 <p>Positioning to place long spineboard.</p>	<b>SL 19-7</b>  Third rescuer assuming position to place long spineboard.
 <p>Placing spineboard under patient's leg.</p>	<b>SL 19-8</b>  Third rescuer places spineboard under patient's leg with the help of second rescuer.
 <p>Rescuer's hands.</p>	<b>SL 19-9</b>  The second rescuer prepares to assume a position to hold the patient's head.
 <p>Holding patient's head.</p>	<b>SL 19-10</b>  First rescuer allows second to take a position to hold patient's head from outside vehicle.



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## SLIDE PROGRAMME GUIDE

### LESSON 19: Lifting and Moving Patients

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Slide Name	Slide Number and Description
Rescuer holds patient's head from outside vehicle.	<b>SL 19-11</b>  The first rescuer allows the second rescuer to move into position to hold the patient's head. Then the first rescuer gets into position in the vehicle's front passenger seat and aids in positioning the patient's legs.
Three rescuers extracting a patient.	<b>SL 19-12</b>  The third rescuer places his hands under the patient's armpits in order to begin rotating the patient.
Three rescuers extracting a patient.	<b>SL 19-13</b>  Three rescuers extracting the patient.
Three rescuers placing the patient on the long spineboard.	<b>SL 19-14</b>  The third rescuer puts the palms of his hands against the patient's back, and while applying pressure, helps the patient lie down on the long spineboard.
Three rescuers accommodating the patient on the long spineboard.	<b>SL 19-15</b>  One rescuer places his hands under the patient's armpits while another places his hands on the pelvis. The rescuer securing the head and neck gives the instructions to move the patient in unison toward the head of the board.

## SLIDE PROGRAMME GUIDE

### LESSON 19: Lifting and Moving Patients

Slide Name	Slide Number and Description
Two rescuers fitting cervical collar on patient (ambulance in background)	<b>SL 19-16</b>  One rescuer hold the patient's head and neck in neutral position while the other places the blanket beneath the patient's head and neck.
Two rescuers placing cervical collar on patient	<b>SL 19-17</b>  Two rescuers placing cervical collar on patient.
One rescuer holding blanket in place.	<b>SL 19-18</b>  Rescuer holding blanket in place under the patient's head and neck.
One rescuer securing straps on a patient.	<b>SL 19-19</b>  The rescuer holding the patient's head in neutral position coordinates moving the patient. Another rescuer secures straps around torso first.
One rescuer securing straps on a patient.	<b>SL 19-20</b>  Rescuer securing straps on the patient.

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## SLIDE PROGRAMME GUIDE

### LESSON 19: Lifting and Moving Patients

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Slide Name	Slide Number and Description
Rescuer applying wide tape to patient's hands.	<b>SL 19-21</b>  To reduce movement of upper extremities, rescuers cross patient's wrists and wrap them together with wide tape.
Rescuer applying wide tape to patient's hands.	<b>SL 19-22</b>  Rescuer applying wide tape to patient's hands.
One rescuer holding patient's head in neutral position and another immobilizing it.	<b>SL 19-23</b>  The rescuer holding the patient's head in position directs the immobilization of the patient. The second rescuer secures the head and neck using strips of wide tape.
One rescuer holding patient's head in neutral position and another immobilizing it.	<b>SL 19-24</b>  One rescuer holding patient's head in neutral position and another immobilizing it.
Two rescuers immobilizing lower extremities.	<b>SL 19-25</b>  Two rescuers securing straps and applying tape to immobilize lower extremities.



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## Medical First Responder Course

# Lesson Plan 20

## Report Writing and Preparation for the Next Call

**Suggested Duration:** 1 hour, 15 minutes

**Materials:**

- Handouts 20-1 and 20-2 (report template)
- Ambulance or rescue truck (if available) to demonstrate decontamination
- One bottle of domestic-use chlorine
- Bucket or large plastic container
- One oropharyngeal airway
- One pair of tweezers
- One red plastic bag with biological hazard symbol
- Full set of personal protective equipment

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Demonstrate how to record information about the patient's condition and treatment given on the prescribed form.
2. List five steps to decontaminate the transport vehicle.
3. List four steps decontaminate the stretcher.
4. List three steps to decontaminate instruments.
5. List the three items for personal decontamination.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 20-1 TR 20-2</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce instructor and assistants.</li> <li>2. Present the lesson.</li> <li>3. Identify lesson objectives.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>1. Report Writing</b></p> <p>Documentation is extremely important and may be legally required for patient care rendered by the MFR. A properly completed written report not only provides all the pertinent facts, it also provides them in a logical order.</p> <p><b>Pre-hospital Treatment Report</b></p> <p>A pre-hospital treatment report is used for all the following reasons:</p> <ul style="list-style-type: none"> <li>• <b>To transfer patient information from one person to another.</b> Your report is turned over to the personnel who transport your patient. They will, in turn, give it to the hospital staff who use it to learn the patient's history, including the condition in which he/she was found, what emergency care was provided, and how the patient responded to that care.</li> <li>• <b>To provide legal documentation.</b> A written report prepared at the scene of an emergency may be used as an official record. If you provide care at the scene of an injury or act of violence, for example, your report may become evidence in the court proceedings.</li> <li>• <b>To document the care you provided.</b> This is important for official reasons, as well. Unfortunately, patients and their families sometimes sue first responders and other EMS professionals. Accurate documentation can be one of your best defences against legal or official action.</li> <li>• <b>To improve your EMS system.</b> Research is performed in many different areas of your EMS system. It is used to improve such factors as response time and the effectiveness of certain procedures. Accurate reports are vital to that research.</li> </ul> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p><b>Always take official report forms to document the patient's information and gather data in the standard format.</b></p> </div>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p>	<p><b>&lt;Review the format template and data required. Remind them that it is only a model and that their country will make adaptations based on legal requirements for documentation.&gt;</b></p> <p><b>&lt;Allow participants time to copy information below.&gt;</b></p> <p>You should record the following basic data:</p> <ul style="list-style-type: none"> <li>• Age and sex</li> <li>• Chief complaint</li> <li>• History of the current illness</li> <li>• Medical history</li> <li>• Medication that the patient is receiving</li> <li>• Allergies</li> <li>• State of consciousness and the patient's general condition</li> <li>• Vital signs</li> <li>• Pertinent physical findings</li> <li>• Treatment given</li> <li>• Disposition (treatment you have given)</li> </ul> <p><b>2. Decontamination of the Unit, Equipment, and Personnel</b></p> <p><b>2.1 Transport Unit (Ambulance or other)</b></p> <p>After completing a call, the transport unit should be prepared to be available to respond to the next call.</p> <ol style="list-style-type: none"> <li>1) Dispose of all contaminated supplies (bandages, dressings, disposable materials) in a sealed plastic bag.</li> <li>2) Collect all contaminated reusable equipment and seal them in another plastic bag.</li> <li>3) Clean the floor, walls and ceiling with soap and water. They may be contaminated with blood, vomitus, faecal matter, dust, mud, etc.</li> </ol> <p><b>NOTE</b></p> <p><b>&lt;Show how to properly dilute the mixture of bleach and water in a clean container. Demonstrate decontamination of surfaces.&gt;</b></p> <ol style="list-style-type: none"> <li>4) Disinfect surfaces with a solution of water and 10 percent bleach. This solution may be harmful to bright metal surfaces.</li> <li>5) Air out the ambulance.</li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<p><b>2.2 Decontamination of the Stretcher</b></p> <ol style="list-style-type: none"><li>1) Remove the contaminated sheet.</li><li>2) Clean and disinfect the stretcher mattress.</li><li>3) Turn the mattress.</li><li>4) Place a clean sheet on the mattress.</li></ol> <p><b>2.3 Decontamination OF INSTRUMENTS</b></p> <ol style="list-style-type: none"><li>1) Scrub contaminated instruments to eliminate any <b><u>dried-on material</u></b>, then wash them with soap and water.</li><li>2) Soak instruments in a 10% bleach and water solution for <b><u>10</u></b> minutes, then dry them off.</li><li>3) Replace instruments and any medication on the unit.</li></ol> <p><b>&lt;Demonstrate how to decontaminate equipment.&gt;</b></p> <p><b>3. Personal Decontamination</b></p> <p>Make sure to decontaminate the following three items after every incident:</p> <ul style="list-style-type: none"><li>• <b>Hands:</b> Thoroughly wash hands in soap and water. Pay close attention to the <b><u>fingernails</u></b>.</li><li>• <b>Clothes:</b> Change out of any contaminated clothing and immediately wash separately from other linens. Keep a spare change of clothes available.</li><li>• <b>Shoes:</b> Wipe shoes clean. Wash off all bodily fluids with a 10% bleach solution.</li></ul>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>III. REVIEW</i></b>  Review lesson objectives and ensure everyone has understood them. Answer any questions on lesson materials. <hr/> <b><i>IV. EVALUATION</i></b>  Organise the participants into two groups. The first group meets with the assistant instructor to review the report and ensure that it is filled out according to the previous day's exercise. The second group meets with the instructor for a demonstration on how to clean the ambulance. Then the groups change places.  <ol style="list-style-type: none"><li>1. The first objective will be measured in the final practical evaluation when completing the Final Report.</li><li>2. Fill out the instructor evaluation form.</li><li>3. Verify achievement of the objectives.</li></ol> <hr/> <b><i>V. CLOSE</i></b>  <ol style="list-style-type: none"><li>1. Explanations, comments, suggestions</li><li>2. Thank the participants and announce the next lesson.</li></ol>	



**Final Report Format (Sample)****INCIDENT INFORMATION**

Incident No.:	Date:
Crew Member Names:	
1. _____	3. _____
2. _____	4. _____
Patient _____ of _____	Unit No. _____ Station No. _____
Received Call (time): _____	Contact with Patient (time): _____
Dispatched (time): _____	Alerted Hospital (time): _____
En-route (time): _____	Transport Patient (time): _____
Arrival on Scene: _____	Arrival at Destination (time): _____
Unit Available (time): _____	
Incident Address: _____	
_____	
Nature of the Call: _____	
Other agencies involved: _____	
Agency transporting patient: _____	

**PATIENT INFORMATION**

Last Name: _____	First Name, M.I.: _____
Incident Address: _____	
_____	
Identification No.: _____	Date of birth: _____ / _____ / _____
Sex (circle one): M F	Age: _____ Estimated weight: _____

**VITAL SIGNS**

Airway: _____	Respirations: _____
Temperature: _____	Skin Color: _____
Skin: _____	Pupils: _____
<b>Palpable Pulses</b>	Time: _____
Radial: _____	Pulse: _____
Carotid: _____	Respirations: _____
Other: _____	Blood Pressure: _____

**HISTORY**

Medical History: \_\_\_\_\_

\_\_\_\_\_

Chief complaints: \_\_\_\_\_

\_\_\_\_\_

Allergies: \_\_\_\_\_

Medications/Treatment: \_\_\_\_\_

\_\_\_\_\_

**VITAL SIGNS**

Time	Pulse	Resp.	Blood Pres.	Comments

**NARRATIVE**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PATIENT REFUSAL OF TREATMENT**\_\_\_\_\_  
Patient's Signature\_\_\_\_\_  
Witness 1 Signature\_\_\_\_\_  
Witness 2 Signature**MFR Officer in Charge**\_\_\_\_\_  
Printed Name\_\_\_\_\_  
Signature



## Lesson 20

### Post-Test

## Report Writing and Preparation for the Next Call

1. List five steps to decontaminate the transport vehicle.
  - 1) *Dispose of all contaminated supplies (bandages, dressings, disposable materials) in a sealed plastic bag.*
  - 2) *Collect all contaminated reusable equipment and seal in a plastic bag.*
  - 3) *Clean the floor, walls and ceiling with soap and water. They may be contaminated with blood, vomitus, faecal matter, dust, mud, etc.*
  - 4) *Disinfect surfaces with a solution of water and 10 percent bleach. This solution may be harmful to bright metal surfaces.*
  - 5) *Ventilate the ambulance.*
  
2. List four steps decontaminate the stretcher.
  - 1) *Remove the contaminated sheet.*
  - 2) *Clean and disinfect the stretcher mattress.*
  - 3) *Turn the mattress.*
  - 4) *Place a clean sheet on the mattress.*
  
3. List three steps to decontaminate instruments.
  - 1) *Scrub contaminated instruments to eliminate any dried-on material, then wash them with soap and water.*
  - 2) *Soak instruments in a 10% bleach and water solution for ten minutes and then dry them off.*
  - 3) *Replace instruments and any medication back on the unit.*
  
4. List the three items for personal decontamination.
  - **Hands:** *Thoroughly wash hands in soap and water. Pay close attention to the fingernails.*
  - **Clothes:** *Change out of any contaminated clothing and immediately wash separately from other clothing.*
  - **Shoes:** *Wipe shoes clean.*

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## Lesson 20 Objectives

1. Demonstrate how to record information about the patient's condition and treatment given on the prescribed form.
2. List five steps to decontaminate the transport vehicle.

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...cont'd.

## Lesson 20 Objectives

3. List four steps to decontaminate the stretcher.
4. List three steps to decontaminate instruments.
5. List the three items for personal decontamination.

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## Medical First Responder Course

# Lesson Plan 21

## Triage and Multiple Casualty Incidents

**Approximate Duration:** 2 hours

**Materials:**

- Flipcharts and markers
- Transparencies
- Handout 21-1
- Triage ribbons

### OBJECTIVES

Upon completion of this lesson, you will be able to:

1. Define Incident Command System.
2. List the five functions of the EMS sector of the Incident Command System.
3. Define triage.
4. List the four categories of triage with their associated colours and briefly explain each category.
5. List the three benchmarks of the START system of triage.
6. Correctly triage a simulated multiple casualty incident.



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 21-1 TR 21-2	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Presentation of instructor and assistants.</li> <li>2. Presentation of the lesson.</li> <li>3. Presentation of the lesson objectives (ask the participants read them from the WB).</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p>One of the most challenging situations for a medical first responder is a multiple-casualty incident (MCI). An MCI is any event where three or more patients are involved or when the number of injured exceeds the capabilities of the first arriving MFR. One way to minimize operating difficulties is to be familiar with the local disaster plan or the Incident Command System. The local disaster plan is a pre-defined set of instructions that tells a community's various agencies what to do in a specific emergency.</p> <p><b>1. Incident Command System (ICS)</b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p><b>Definition:</b> A flexible system for managing people and resources.</p> </div> <p>One widely used plan for handling a multiple casualty incident is the <b><i>Incident Command System</i></b>. It provides a framework for all types of incidents. The ICS provides a command structure through which to manage multiple-casualty incidents.</p> <p>In the incident command system one component or part of the system will take care of triage, treatment, and transportation of the victims. This is common in many systems used to deal with multiple casualty incidents. The following method is a good way to divide or organize an incident to deal with triage, treatment, and transportation of the victims.</p>	
TR 21-3		
TR 21-4		



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>Allow participants time to copy</b></p>	<p><b>EMS Sector Functions</b></p> <ul style="list-style-type: none"> <li>• <b>Triage Sector</b>—provides patient assessment, tagging, and removal of patients to a designated treatment area</li> <li>• <b>Treatment Sector</b>—sets up a treatment area</li> <li>• <b>Transportation Sector</b>—arranges for ambulances and tracks patients</li> <li>• <b>Staging Sector</b>—releases and distributes resources when they are needed</li> <li>• <b>Safety Officer</b>—maintains scene safety</li> </ul> <p><b>Medical First Responder's Role</b></p> <p>As an MFR, find out what your EMS system requires you to do in the first crucial minutes of an MCI. Your major goals are then to:</p> <ol style="list-style-type: none"> <li>1) Establish command.</li> <li>2) Assess the scene.</li> <li>3) Request additional resources.</li> <li>4) Begin triage.</li> </ol> <p><b>Scene Assessment</b></p> <p>Note that once you identify an incident as an MCI, you must resist the urge to take part in providing treatment. During your scene assessment, identify the following:</p> <ul style="list-style-type: none"> <li>• Scene safety</li> <li>• Number of patients</li> <li>• Needs for extrication</li> <li>• Estimated number of ambulances needed</li> <li>• Other factors affecting the scene and resources</li> <li>• Number of sectors needed</li> <li>• Area to stage resources</li> </ul> <p>Make an initial scene report to EMS dispatch. Keep it brief. Give all information necessary for other rescuers to react to the MCI appropriately.</p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
TR 21-5	<h2>2. Triage</h2> <div> <p><b>Definition:</b> The process of sorting patients to determine the order in which they will receive care.</p> </div> <p>Triage is a French word meaning “pick” or “sort”. It is a process of classifying sick and injured patients in a mass casualty incident. In triage, the most critical but salvageable patients are treated and transported first. It is your goal to afford the greatest number of people the greatest chance of survival.</p> <h3>2.1 “S.T.A.R.T.” Method of Triage</h3> <p>S.T.A.R.T., which stands for “Simple Triage and Rapid Treatment”, is a very successful program. There are four START categories:</p> <ul style="list-style-type: none"> <li>• <b>Priority 1-RED:</b> Highest priority, assigned to patients with critical conditions such as <u>airway and breathing difficulties, uncontrolled or severe bleeding, and decreased mental status.</u></li> <li>• <b>Priority 2-YELLOW:</b> Second priority or urgent care category. Assigned to patients with conditions such as <u>burns without airway problems and major or multiple painful, swollen or deformed extremities; and back injuries.</u></li> <li>• <b>Priority 3-GREEN:</b> Lowest priority or delayed-care category. Assigned to patients who are not seriously injured, need minimal care, and can wait for treatment without getting worse. This includes patients with <u>minor painful, swollen, or deformed extremities, minor soft-tissue injuries.</u></li> <li>• <b>Priority 0-BLACK:</b> Assigned to the dead or fatally injured. Includes injuries incompatible with life (see Lesson 6).</li> </ul> <h3>2.2 Triage ribbons and tags</h3> <p>After patients are assessed and sorted, they must be tagged for <u>rapid identification.</u> Triage ribbons and tags come in a variety of sizes, shapes and colours.</p> <p>Once a patient is given a tag, <b>do not remove it.</b> If a patient changes status before being treated, draw a bold line through the original tag, note the time and put a new tag on the patient.</p>	





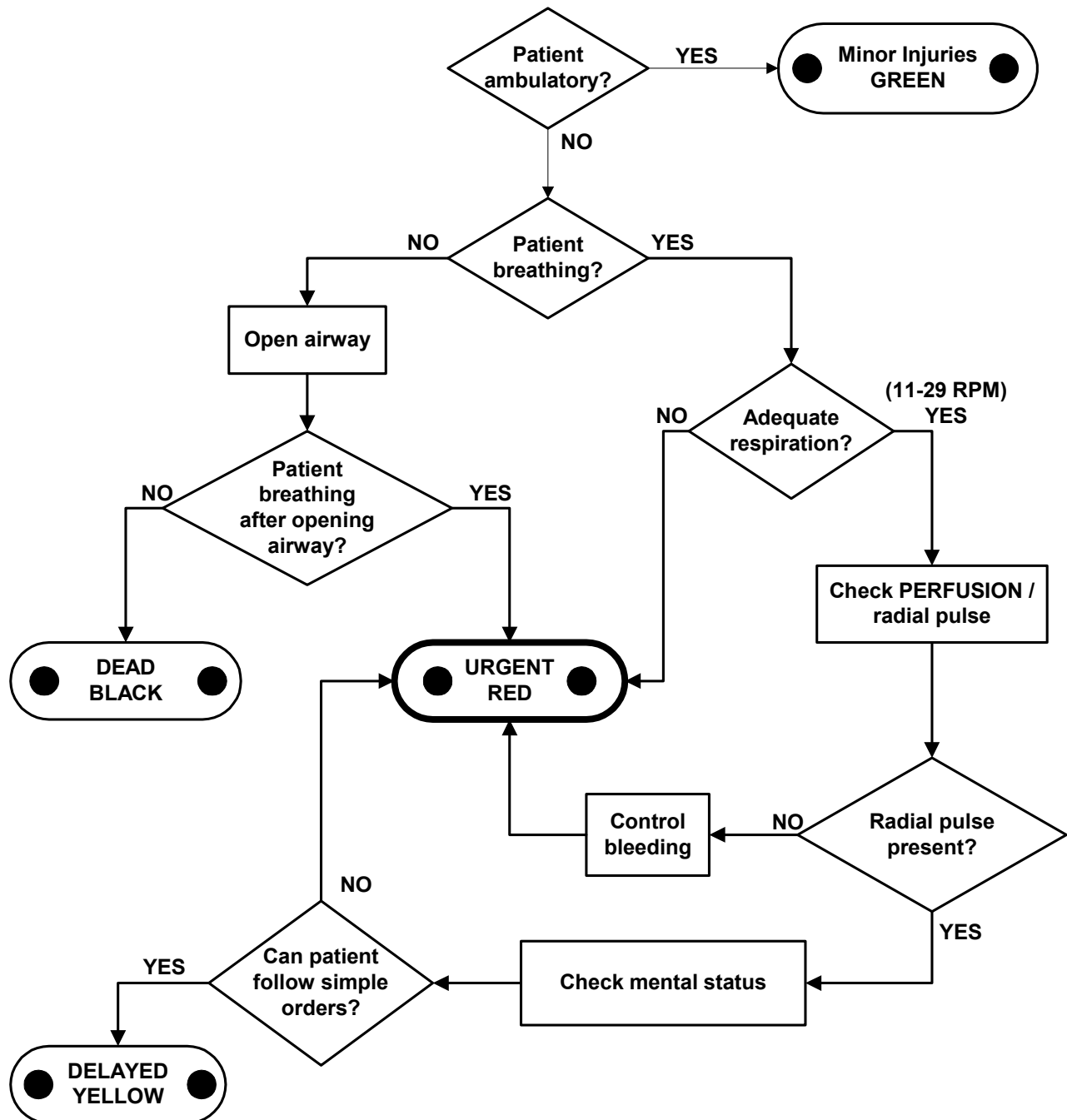
Visual Aids and Other Materials	CONTENT	Time Elapsed
<p><b>NOTE</b></p> <p><b>FC 21-1</b></p>	<h3>3. The S.T.A.R.T. System</h3> <p><b>&lt;START Flowchart on LP-7 and WB-7.&gt;</b></p> <p>In the S.T.A.R.T. system, first tell all patients who are able to walk to move unassisted to a specified area. Assign these patients—called the “walking wounded”—a <b>Priority 3-Green</b> (delayed care). Then turn your attention to the patients unable to walk away. Begin triage with an initial assessment using the following benchmarks:</p> <ul style="list-style-type: none"><li>• <b>Respirations:</b><ul style="list-style-type: none"><li>– If breathing is faster than 30 respirations per minute, assign <b>Priority 1-Red</b>.</li><li>– If the patient is not breathing, make one attempt to open the airway and clear foreign matter from the mouth. If unassisted breathing resumes, assign <b>Priority 1-Red</b>. If breathing does not resume, assign <b>Priority 0-Black</b>.</li><li>– If breathing is less than 30 breaths per minute, perform perfusion assessment.</li></ul></li><li>• <b>Perfusion:</b><ul style="list-style-type: none"><li>– Assess capillary refill. More than 2 seconds indicates inadequate perfusion—assign <b>Priority 1-Red</b>. Control all major haemorrhaging.</li><li>– If capillary refill is less than 2 seconds, perform mental status assessment.</li><li>– In cases of poor lighting, check radial pulse. Absent pulse indicates blood pressure below 80 mmHg and inadequate perfusion.</li></ul></li><li>• <b>Mental Status</b> (ability to follow simple commands):<ul style="list-style-type: none"><li>– If patient is unable to respond to simple commands such as “close your eyes,” assign <b>Priority 1-Red</b>.</li><li>– If the patient is able to respond, assign <b>Priority 2-Yellow</b>.</li></ul></li></ul> <p><b>Once you have tagged to a patient, your assessment ends. Move on to the next patient.</b></p>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
	<hr/> <b><i>III. PRACTICAL EXERCISES AND REVIEW</i></b> Perform the corresponding exercise. <hr/> <b><i>IV. EVALUATION</i></b> <ol style="list-style-type: none"><li>1. Confirm completion of lesson objectives.</li><li>2. Distribute instructor evaluation and allow participants 10 minutes to complete it.</li></ol> <hr/> <b><i>V. CLOSE</i></b> <ol style="list-style-type: none"><li>1. Comments, suggestions.</li><li>2. Thank the participants and announce the next lesson.</li></ol>	



## S.T.A.R.T. Flowchart





## **Lesson 21**

### **Practical Exercises**

### **Triage and Multiple Casualty Incidents**

#### **Station: Triage Practical Exercise**

This practical exercise has only one station for all participants. Scene security, initial assessment and physical exam do not apply to this station.

#### **Materials:**

- 4 sets of 18 triage labels
- 4 sets of triage ribbons
- List of participants in each group on separate sheets
- Key list of cases (injuries or medical problems)
- All instructors

In this station, participants will work in their established groups. Four instructors will supervise performance. Use the following guidelines:

- 1) One group will triage the victims using START method.
- 2) The remaining three groups will act as the injured.
- 3) After triage is complete, groups will rotate positions until all groups have performed triage.

#### **Scenario:**

Eighteen participants (six participants in each group) will act as victims of a simulated motor vehicle accident. The scenario involves an overturned bus with victims scattered over an area of 40 square meters.

#### **Procedure:**

1. The group performing triage (“rescuers”) stages nearby, where they cannot see the victims. Number all rescuers from 1 to 6 on a list. Assemble the rest of the participants, who will act as victims, at the accident scene.
2. Give each victim one of the numbered triage labels. Each number will correspond to a trauma or medical problem, as identified on the list of injuries/medical problems on the next page. Each triage label indicates the mental, breathing and perfusion status that the victim will be instructed to reveal to the rescuer.
3. Instruct the victims to physically simulate the assigned condition as much as possible (e.g., if the label reads “unconscious victim,” the participant must act unconscious; if the label reads “hysterical victim” because his/her son is missing, the participant must act out this situation).
4. Instruct the victims to scatter at random over the “accident site.” Once this is done, notify the rescuers.
5. Instruct the rescue group to approach the accident site in two groups of three, spaced 30 seconds apart. There is no specific time limit set on the triage exercise. The exercise concludes when all victims are triaged.



## **Lesson 21**

### **Practical Exercises (cont'd.)**

#### **Additional Details:**

1. Each victim should verbally state his/her respiratory rate and perfusion status to the rescuer **only** after the rescuer checks those vitals.
2. Each victim should simulate his/her injuries. For example, if the victim has a broken arm, the victim should only tell the rescuer about the injury after being asked, or signal the injury with an expression of pain if the rescuer palpates the injured area.
3. After the rescuer has performed all required checks, the victim can give the rescuer the triage label so the rescuer can fill it out. The rescuer must circle either Red, Yellow, Green or Black according to the victim's status, and will then apply the corresponding color ribbon to the victim's extremity.
4. Once all victims are triaged, the exercise is concluded. An instructor will collect the triage labels and after the final group is done, will compare the labels to the list of injuries (see list). The instructors will meet with all participants and review their performance.



## Lesson 21

### Practical Exercises (cont'd.)

#### List of Injuries

<u>Victim #</u>	<u>Condition</u>	<u>Mental Stat.</u>	<u>Resp.</u>	<u>Perf.</u>	<u>Color</u>
1	Unconscious	U	12	<2	Red
2	Wrist fracture	C	16	<2	Yellow
3	FBAO	C	0	<2	Red
4	Ankle fracture	C	25	<2	Yellow
5	Unconscious	U	20	<2	Red
6	Hip fracture	C	25	<2	Yellow
7	Blunt trauma, light	C	18	<2	Green
8	Hysteria	C	28	<2	Green
9	Knee fracture	C	18	RPP	Yellow
10	Ankle fracture	C	25	RPP	Yellow
11	Dead	N/R	00	NRP	Black
12	No trauma	C	20	<2	Green
13	Scalp wound	C	32	NRP	Red
14	Sharp cervical pain	C	18	<2	Yellow
15	Dead	N/R	00	NRP	Black
16	Closed abdominal trauma	C	22	RPP	Yellow
17	Trauma to right thigh	C	18	RPP	Yellow
18	Closed chest trauma	C	32	>2	Red

U=Unconscious      C=Conscious

NRP=No Radial Pulse      RPP=Radial Pulse Present      N/R = No Response

**NOTE: The victims are expected to simulate their injuries. The condition of the patient should not be written on the labels.**



**Triage Label**

**Victim # 1**

- Unconscious

**RR = 10**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 2**

- Wrist fracture
- Conscious

**RR = 16**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 3**

- FBAO
- Unconscious

**RR = 00**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 4**

- Ankle fracture
- Conscious

**RR = 25**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**



**Triage Label**

**Victim # 5**

- Unconscious

**RR = 20**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 6**

- Hip fracture
- Conscious

**RR = 25**

**Perfusion = < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 7**

- Blunt trauma, trauma
- Conscious

**RR = 18**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 8**

- Hysteria
- Conscious

**RR = 28**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**





**Triage Label**

**Victim # 9**

- Knee fracture
- Conscious

**RR = 18**

**Perfusion =    Radial Pulse  
                         Present**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim # 10**

- Ankle fracture
- Conscious

**RR = 25**

**Perfusion =    Radial Pulse  
                         Present**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim 11**

- Dead
- No response

**RR = 00**

**Perfusion =    No Radial  
                         Pulse**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Victim 12**

- No trauma
- Conscious

**RR = 20**

**Perfusion = Less than 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**



**Triage Label**

**Victim # 13**

- Scalp wound
- Conscious

**RR = 32**

**Perfusion = No Radial  
Pulse**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red Yellow Green Black**

**Triage Label**

**Victim # 14**

- Sharp cervical pain
- Conscious

**RR: 18**

**Perfusion < 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red Yellow Green Black**

**Triage Label**

**Victim # 15**

- Dead
- Non-responsive

**RR: 00**

**Perfusion = No Radial  
Pulse**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red Yellow Green Black**

**Triage Label**

**Victim # 16**

- Closed abdominal trauma
- Conscious

**RR: 22**

**Perfusion = Radial Pulse  
Present**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red Yellow Green Black**



**Triage Label**

**Victim 17**

- Trauma to right thigh
- Conscious

**RR = 18**

**Perfusion =     Radial Pulse  
                         Present**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**

**Triage Label**

**Group: 1, 2, 3, 4**

**Victim 18**

- Closed chest trauma
- Conscious

**RR = 32**

**Perfusion > 2 sec.**

**Rescuer #: \_\_\_\_\_**

**Circle ribbon color:**

**Red   Yellow   Green   Black**



## **Lesson 21**

### **Post-Test**

# **Triage and Multiple Casualty Incidents**

1. Define an Incident Command System.

*A flexible system for managing people and resources.*

2. List the five functions of the EMS sector of the Incident Command System.

- *Triage*
- *Treatment*
- *Transportation*
- *Staging*
- *Safety Officer*

3. Define triage.

*The process of sorting patients to determine the order in which they will receive care.*

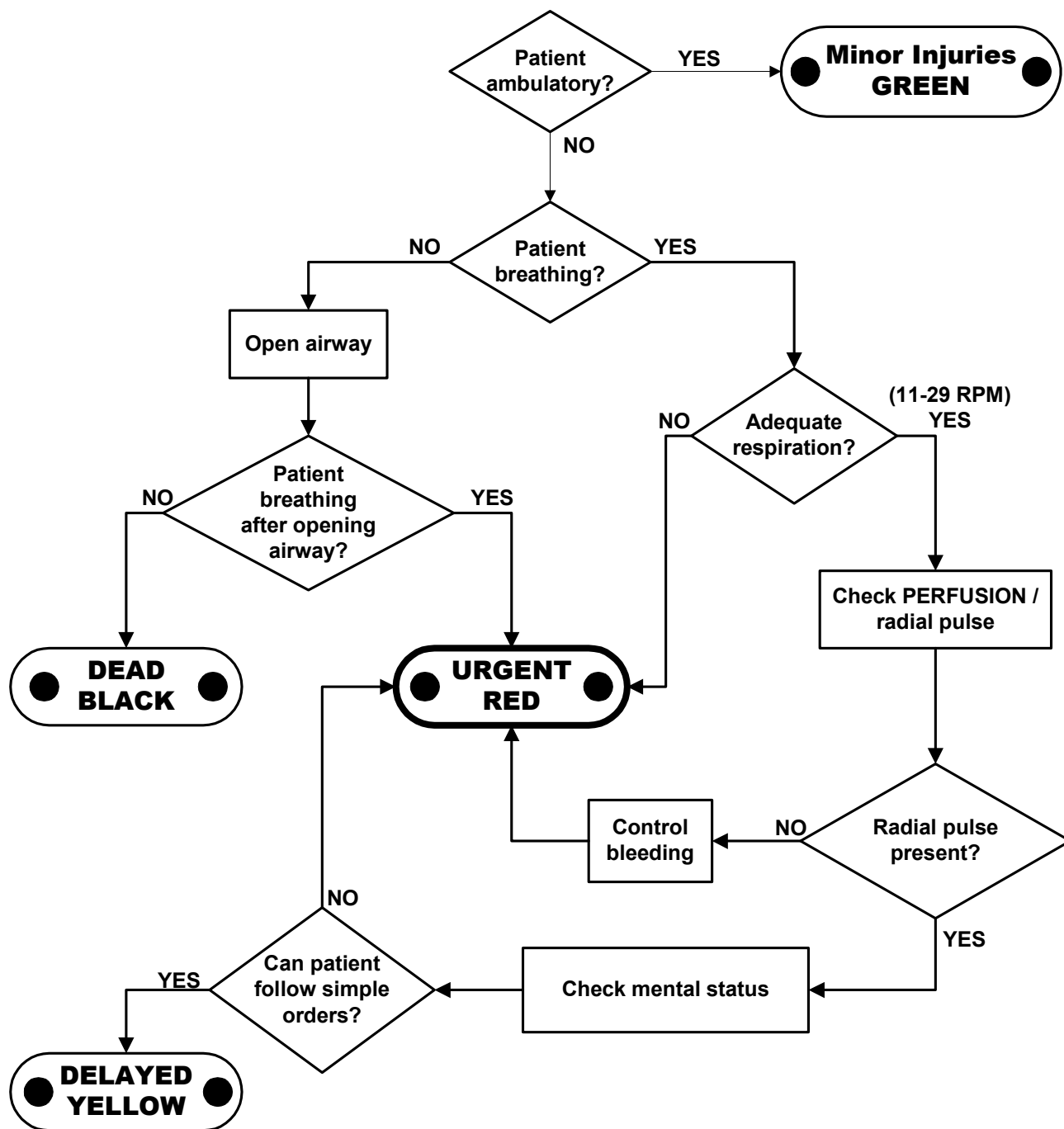
4. List the four categories of triage with their associated colours and briefly explain each category.

- *1-Red: The highest priority given to patients.*
- *2-Yellow: The second priority or urgent care category.*
- *3-Green: The lowest priority or delayed-care category.*
- *0-Black: No-care category.*

5. List the three benchmarks of the START system of triage.

- *Respiration*
- *Perfusion*
- *Mental status*

## S.T.A.R.T. Flowchart



1

Medical First Responder Course

## Lesson 21 Objectives

1. Define Incident Command System.
2. List the five functional sectors of the Incident Command System.
3. Define triage.

*more...*

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Medical First Responder Course

*...cont'd.*

## Lesson 21 Objectives

4. List the four categories of triage with their associated colours and briefly explain each category.
5. List the three benchmarks of the S.T.A.R.T. system of triage.
6. Correctly triage a simulated multiple casualty incident.

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Medical First Responder Course

## Incident Command System (ICS)

A flexible system for managing people and resources.

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Medical First Responder Course

## Incident Command System

The diagram illustrates the Incident Command System (ICS) structure. At the top, the 'Command Post' and 'Comm.' (Communication) are shown. Below them, the 'Inner Perimeter' and 'Outer Perimeter' are defined. The 'Inner Perimeter' contains the 'Collection and Treatment Area for the Wounded' and the 'Incident Area (Triage)'. The 'Outer Perimeter' contains the 'Collection Area for the Walking Wounded'. To the left of the 'Inner Perimeter' is 'Security and Access Control'. Below the 'Inner Perimeter' are 'Transportation' (represented by an ambulance icon) and 'Logistics and Staging' (represented by a medical supply icon). The 'Collection Area for the Walking Wounded' is also shown.

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Medical First Responder Course

## Triage

The process of sorting patients to determine the order in which they will receive care.

Rev. Feb 2002 TR21-5



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# **Medical First Responder Course**

## **Lesson Plan 22**

### **Course Review: Lessons and Practicals**

**Approximate Duration:** 2 hours

**Format:** All instructors should be present to answer questions from the participants.

**Materials:**

- Flipcharts of the “File”
- Materials used in the practical stations for Patient Assessment, Childbirth Emergencies, Oxygen Therapy and Musculoskeletal Injuries, including all immobilisation and transport materials.
- One mannequin for transport
- Transparencies

#### **OBJECTIVES**

1. To answer questions and resolve issues that were recorded in the “File” by participants.
2. To review the most important practical procedures that were demonstrated and practised throughout the course.
3. To outline what is expected in the Final Practical Evaluation and answer any questions regarding the Evaluation.



Visual Aids and Other Materials	CONTENT	Time Elapsed
<p>TR 22-1 TR 22-2</p>	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Thank participants for their participation and willingness to learn. It was a great pleasure for the entire group of instructors.</li> <li>2. The class benefited from all the participation and a higher level of learning was achieved.</li> <li>3. Congratulate the participants for working well together in their practical stations.</li> <li>4. Present lesson objectives.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b><i>&lt;Answer any questions and resolve issues from all lessons. Questions particular lesson will answer the questions. One instructor will act as moderator.&gt;</i></b></p> <p><b><i>&lt;Lesson 23: The instructor responsible for teaching Lesson 23, the Final Practical Evaluation, will briefly describe the details of the evaluation, explain the grading system and any other issues.&gt;</i></b></p> <hr/> <p><b><i>III. CLOSE</i></b></p> <p>“This review has covered all of the lessons throughout the course. We hope you have taken advantage of this review to have all your questions answered and any issues cleared up. Good luck on tomorrow’s practical evaluation.”</p>	



1

Medical First Responder Course

## Lesson 22 Objectives

- 1) To answer questions and resolve issues that were recorded in the "File" by participants
- 2) To review the most important practical procedures that were demonstrated and practised throughout the course

more ...

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TR22-1

2

Medical First Responder Course

...cont'd.

## Lesson 22 Objectives

- 3) To outline what is expected in the Final Practical Evaluation and answer any questions regarding the Evaluation.

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TR22-2



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## **Medical First Responder Course**

# **Lesson Plan 23**

# **Final Practical Evaluation**

**Approximate Duration:** 5 hours, 30 minutes

**Materials:**

- Materials list follows each scenario.
- All course instructors must be present.
- Six assistants will be needed to role play as victims

### **OBJECTIVES**

Objectives for the Final Practical Exercise are identified as course performance objectives in Lesson 1.



Visual Aids and Other Materials	CONTENT	Time Elapsed
NOTE	<hr/> <p><b><i>I. INTRODUCTION</i></b></p> <ol style="list-style-type: none"> <li>1. Introduce the instructor and assistant.</li> <li>2. Present the lesson.</li> <li>3. Present lesson objectives.</li> </ol> <hr/> <p><b><i>II. DEVELOPMENT</i></b></p> <p><b>&lt;Much of the following text is verbatim from the workbook. "You" refers to the participants.&gt;</b></p> <p>You are being provided copies of the score forms which the instructors will use to score your performance during the Final Practical Evaluation. By reading these forms you will know exactly what steps you will be expected to complete in order to pass the Final Practical Evaluation successfully. There will be no surprises. You will only be tested on subject matter and skills you have learned and practised during the Medical First Responder Course.</p> <ol style="list-style-type: none"> <li>1. The practical evaluation consists of three stations with simulated situations, as follows: <ul style="list-style-type: none"> <li><b>Station 1:</b> Trauma situation – 100 points (80 pts. to pass)</li> <li><b>Station 2:</b> Medical Emergency – 50 points (40 pts. to pass)</li> <li><b>Station 3:</b> Labour &amp; Delivery – 50 points (40 pts. to pass)</li> </ul> </li> <li>2. The evaluation will proceed in the following manner: <ol style="list-style-type: none"> <li>a) You will be isolated so they will be unable to see the stations until they are called.</li> <li>b) When called, you will be required complete all three stations consecutively.</li> <li>c) If you do not reach the minimum score in a given Final Practical station, you will have a second chance to perform the station satisfactorily. If you are unable to achieve a passing score on the second attempt, you will qualify to receive only a Certificate of Attendance to the course.</li> <li>d) After completing the three stations, you will be isolated from the others who have not yet begun. (It is acceptable for those who are finished to watch the stations.)</li> </ol> </li> </ol>	



Visual Aids and Other Materials	CONTENT	Time Elapsed
<b>NOTE</b>	<p>3. You must review the performance objectives of every station to make sure you achieve them all.</p> <p><b>&lt;Make clear to all participants that the points scored for each of the steps will be either 0 (zero) or the number indicated. The difference in points is established to reflect the value or weight that each step has in terms of the objective.</b></p> <p><b>&lt;Example: In the Trauma Station, “personal protection” is worth 5 points. The participant who uses all required personal protective equipment will receive 5 points. The participant who uses only a mask or gloves, but not safety glasses, will receive zero points.&gt;</b></p> <p><b>Reminders to Instructors</b></p> <ul style="list-style-type: none"><li>• The instructor at each station should make sure to have enough extra copies of the performance objective checklists to evaluate every participant.</li><li>• To save time, you can set up duplicate stations — two for trauma, two for medical emergencies, and two for childbirth.&gt;</li><li>• After all participants have completed the final evaluation, the station instructors will turn in the performance objective checklists for all participants. The Course Coordinator will be responsible for recording all scores in a spreadsheet.</li></ul>	



## Final Practical Evaluation

### Station 1: Trauma

### Score Form

Participant's Name: \_\_\_\_\_ Date: \_\_\_\_\_

Initial Assessment	Points	Completed
Secure the scene .....	3	<input type="checkbox"/>
Personal protection (universal precautions) .....	3	<input type="checkbox"/>
State of consciousness (ask and shake) .....	3	<input type="checkbox"/>
Airways – maintain open airway considering condition of neck .....	5	<input type="checkbox"/>
Breathing – evaluate respirations (look, listen, feel) .....	5	<input type="checkbox"/>
Circulation: ..... Check carotid pulse .....	5	<input type="checkbox"/>
Control critical bleeding .....	3	<input type="checkbox"/>
Apply cervical collar (proper size and placement) .....	5	<input type="checkbox"/>
Administer oxygen .....	5	<input type="checkbox"/>
Identify need for immediate transport or perform physical exam .....	3	<input type="checkbox"/>

Physical Exam	Points	Completed
<b>Interview</b> ..... Patient .....	2	<input type="checkbox"/>
Witnesses .....	2	<input type="checkbox"/>
<b>Vital signs</b> ..... RPM .....	2	<input type="checkbox"/>
PPM .....	2	<input type="checkbox"/>
BP .....	2	<input type="checkbox"/>
Skin temperature .....	2	<input type="checkbox"/>
<b>Head</b> ..... Inspect and palpate head and ears .....	2	<input type="checkbox"/>
Assess eyes .....	2	<input type="checkbox"/>
Assess mouth and nose .....	2	<input type="checkbox"/>



## Station 1: Trauma Score Form

Participant's Name: \_\_\_\_\_

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<b>Neck</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
(can be done before immobilizing)			

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<b>Thorax</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
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<b>Abdomen</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
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<b>Pelvis</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
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<b>Lower extremities</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
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(one point per extremity)	Distal pulses .....	2 .....	<input type="checkbox"/>
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Sensation/motor function .....	2 .....	<input type="checkbox"/>
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<b>Upper extremities</b> .....	Assess/palpate .....	2 .....	<input type="checkbox"/>
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(one point per extremity)	Distal pulses .....	2 .....	<input type="checkbox"/>
------------------------------	---------------------	---------	--------------------------

---

Sensation/motor function .....	2 .....	<input type="checkbox"/>
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<b>Rotation</b> .....	Observe/palpate dorsal region .....	2 .....	<input type="checkbox"/>
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### Pre-Hospital Treatment

Fractures .....	Correct immobilization device .....	5 .....	<input type="checkbox"/>
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Correct application .....	5 .....	<input type="checkbox"/>
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Correct position .....	2 .....	<input type="checkbox"/>
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Shock .....	Maintain body heat .....	2 .....	<input type="checkbox"/>
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Emotional support .....	3 .....	<input type="checkbox"/>
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Indicate when ready to transport patient .....	3 .....	<input type="checkbox"/>
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**Total Points Possible: 100****Minimum passing score: 80 points****Score:** \_\_\_\_\_

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**Instructor's Name:** \_\_\_\_\_**Instructor's Signature:** \_\_\_\_\_

(Comments on reverse.)



## Final Practical Evaluation Station 2: Medical Score Form

Participant's Name: \_\_\_\_\_ Date: \_\_\_\_\_

	Points	Completed
Secure the scene .....	4	<input type="checkbox"/>
Personal protection .... Universal precautions .....	4	<input type="checkbox"/>
State of consciousness (shake and call) .....	3	<input type="checkbox"/>
<hr/>		
Initial assessment .....		
Patient airway .....	5	<input type="checkbox"/>
Breathing .....	5	<input type="checkbox"/>
Circulation .....	5	<input type="checkbox"/>
Condition .....	1	<input type="checkbox"/>
Physical exam .....	5	<input type="checkbox"/>
<hr/>		
Interview .....		
Patient .....	2	<input type="checkbox"/>
Family .....	2	<input type="checkbox"/>
Witnesses .....	2	<input type="checkbox"/>
<hr/>		
General impression .... (MFR's impression) .....	4	<input type="checkbox"/>
Administer oxygen .....	3	<input type="checkbox"/>
Explain appropriate treatment to instructor .....	3	<input type="checkbox"/>
Preparation for transport .....	1	<input type="checkbox"/>
Indicate when ready to transport patient .....	1	<input type="checkbox"/>

**Total Points Possible: 50**

**Minimum passing score: 40 points**

**Score: \_\_\_\_\_**

**Instructor's Name:** \_\_\_\_\_

**Instructor's Signature:** \_\_\_\_\_

(Comments on reverse.)



## Final Practical Evaluation Station 3: Childbirth Score Form

Participant's Name: \_\_\_\_\_ Date: \_\_\_\_\_

	Points	Completed
Secure the scene .....	4	<input type="checkbox"/>
Personal protection .... Universal precautions .....	4	<input type="checkbox"/>
Initial Assessment .....		
State of consciousness .....	1	<input type="checkbox"/>
Patient airway .....	5	<input type="checkbox"/>
Breathing .....	5	<input type="checkbox"/>
Circulation .....	5	<input type="checkbox"/>
Condition .....	1	<input type="checkbox"/>
Patient interview .....	3	<input type="checkbox"/>
Childbirth .....		
Prepare patient area .....	1	<input type="checkbox"/>
Prepare newborn area .....	1	<input type="checkbox"/>
Patient position .....	1	<input type="checkbox"/>
Hold/support newborn .....	5	<input type="checkbox"/>
Initial assessment (newborn) .....	5	<input type="checkbox"/>
Manage umbilical cord .....	5	<input type="checkbox"/>
Manage placenta .....	1	<input type="checkbox"/>
Preparation for transport .....	2	<input type="checkbox"/>
Indicate when ready to transport patient .....	1	<input type="checkbox"/>

**Total Possible Points: 50**

**Minimum passing score: 40 points**

**Score: \_\_\_\_\_**

**Instructor's Name:** \_\_\_\_\_

**Instructor's Signature:** \_\_\_\_\_

(Comments on reverse.)





## **Final Practical Evaluation Scene for**

### **Station 1: Trauma**

Arriving at the scene, the MFR finds an adult lying on the ground near a tree.

#### **Initial Assessment**

Scene ..... No dangers present  
State of consciousness ..... Patient conscious  
Patient airway ..... Open  
Breathing ..... Adequate  
Circulation ..... Fast pulse  
Skin ..... Good color

#### **Physical Exam**

**Interview:** There are no family members or witnesses present. Patient indicates he was climbing the tree to pick fruit and fell to the ground. Has severe pain in right thigh.

#### **Vital Signs**

- 16 rpm
- 110 ppm
- 110/76 mmHg

The MFR finds no physical problems during physical exam except for the right thigh, which is swollen, rigid, and painful.

#### **Pre-hospital Treatment**

1. Immobilize thigh with splint.
2. Treat for shock.
3. Use long backboard.
4. Request transport.



## Final Practical Evaluation Scene for

### Station 2: Medical

Arriving at the scene, the MFR finds an adult seated in a chair, experiencing respiratory distress.

#### Initial Assessment

Scene ..... No dangers present  
State of consciousness ..... Patient conscious  
Patient airway ..... Open  
Breathing ..... Moving air, with difficulty  
Circulation ..... Fast pulse  
Skin ..... Pale

#### Physical Exam

**Interview:** The patient cannot speak due to lack of air. The family indicates the patient is a heavy smoker. No other witnesses are present.

#### Vital Signs

- 32 rpm
- 120 ppm
- 140/90 mmHg

The MFR does not identify any physical problems during physical exam.

#### Pre-hospital Treatment

1. Administer oxygen at 15 lpm.
2. Place the patient in most the comfortable position.
3. Request immediate transport.



## Final Practical Evaluation Scene for

### Station 3: Childbirth

Arriving at the scene, the MFR finds an adult female patient lying on the floor, suffering from severe pain.

#### Initial Assessment

Scene ..... No dangers present  
State of consciousness ..... Patient conscious  
Patient airway ..... Open  
Breathing ..... Adequate  
Circulation ..... Normal pulse  
Skin ..... Good color

#### Physical Exam

**Interview:** The patient indicates she is 39 weeks pregnant. This is her second pregnancy. She has broken her water bag. Contractions are coming every three minutes with one minute duration.

The nearest hospital is 20 minutes away.

#### Vital Signs

- 28 rpm
- 110 ppm
- 140/85 mmHg

The MFR does not identify any physical problems during the physical exam.